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OEL Maintenance Manual

B840/ES8140

Revision 2

Rev	Date	Oki Data Corporation
1	2010-10-28	
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		No.	Page	Description of change	

PREFACE

This manual explains the maintenance methods for the B820/B840.

The manual has been prepared for use by the maintenance personnel. For operating methods of the B820/B840, refer to the corresponding user's manual.

Note!

- The contents of this manual are subject to changes without prior notice.
- Despite that exhaustive efforts were made in preparing the manual to make it accurate, it still may contain errors. Oki Data will not hold itself liable for any damage that results or is claimed to have resulted from repair, adjustment, or modification of the printer conducted by the user using this manual.
- The parts employed in the printer are so delicate that they may be damaged if not treated properly. Oki Data strongly recommends that the maintenance of the printer be undertaken by Oki Data's registered maintenance personnel.
- Work after eliminating static electricity.

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1. CONFIGURATION

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1.1 System Configuration

Figure 1-1 represents the system configuration of the printer.

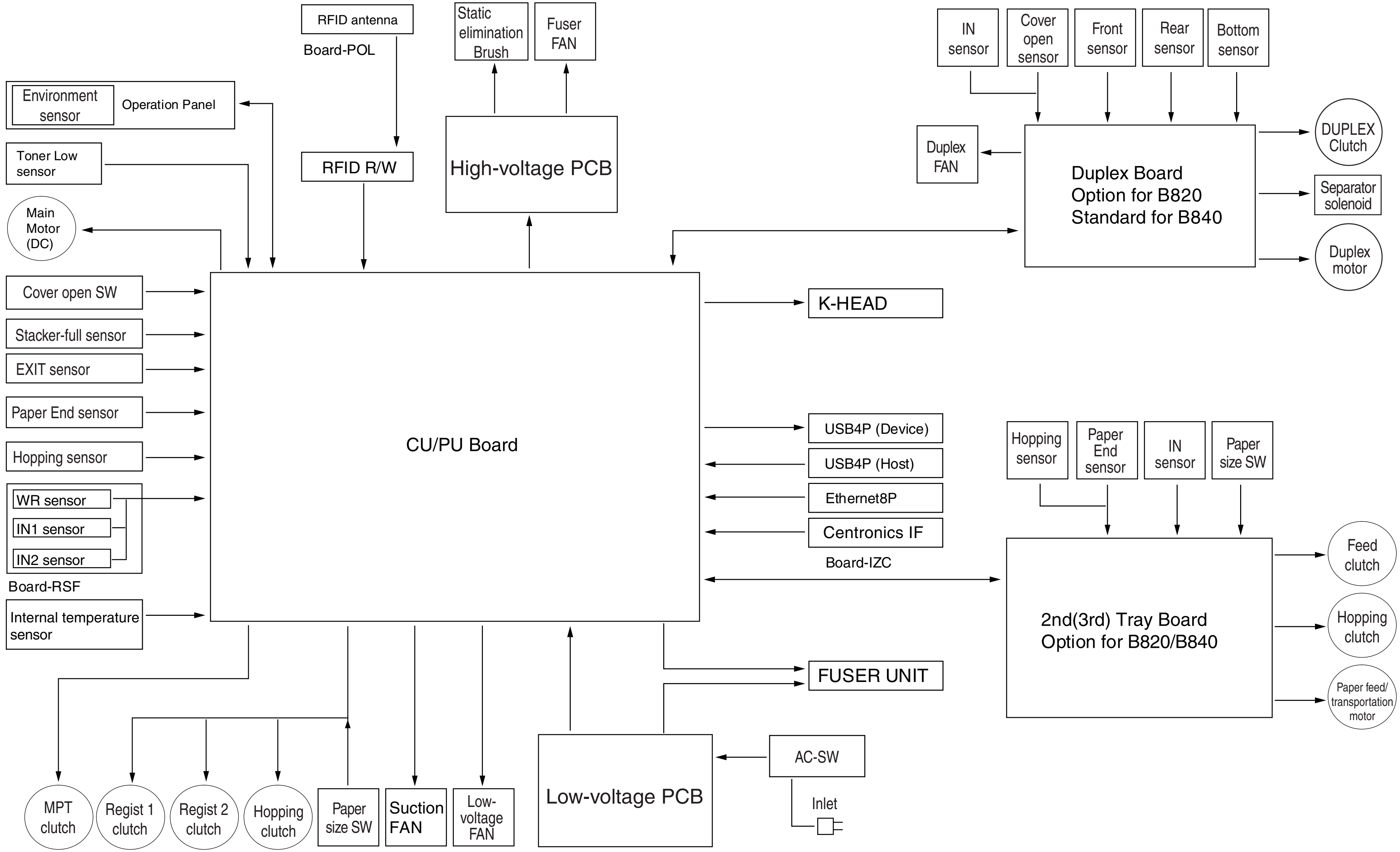

RFID antenna
Board-POL
RFID R/W
Static elimination Brush
Fuser FAN
High-voltage PCB
Environment sensor
Operation Panel
Toner Low sensor
Main Motor (DC)
Cover open SW
Stacker-full sensor
EXIT sensor
Paper End sensor
Hopping sensor
WR sensor
IN1 sensor
IN2 sensor
Board-RSF
Internal temperature sensor
CU/PU Board
IN sensor
Cover open sensor
Front sensor
Rear sensor
Bottom sensor
Duplex FAN
Duplex Board
Option for B820
Standard for B840
DUPLEX Clutch
Separator solenoid
Duplex motor
K-HEAD
USB4P (Device)
USB4P (Host)
Ethernet8P
Centronics IF
Board-IZC
Hopping sensor
Paper End sensor
IN sensor
Paper size SW
2nd(3rd) Tray Board
Option for B820/B840
Feed clutch
Hopping clutch
Paper feed/ transportation motor
FUSER UNIT
MPT clutch
Regist 1 clutch
Regist 2 clutch
Hopping clutch
Paper size SW
Suction FAN
Low-voltage FAN
Low-voltage PCB
AC-SW
Inlet

Figure 1-1

1.2 Printer configuration

The internal part of the printer is composed of the following sections:

- Electrophotographic processing section
- Paper paths
- Control sections (CU sect./PU sect.)
- Operator panel
- Power supply sections (High-voltage sect./low-voltage sect.)

Figure 1-2 represents the configuration of the printer.

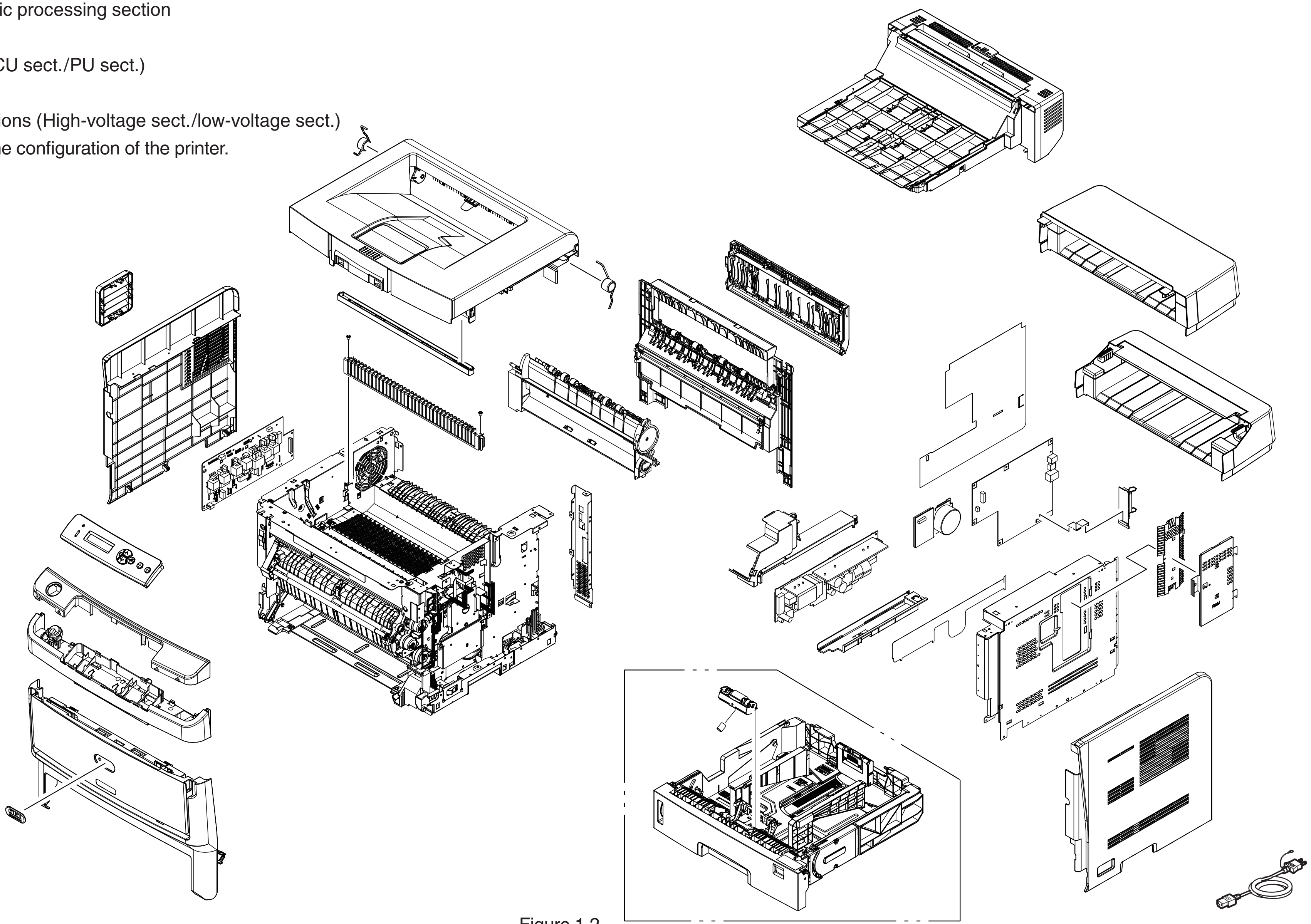
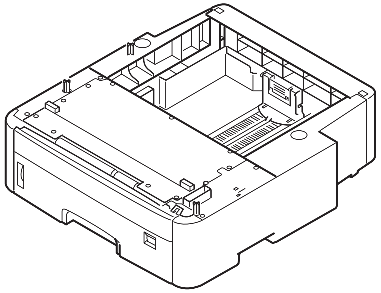


Figure 1-2

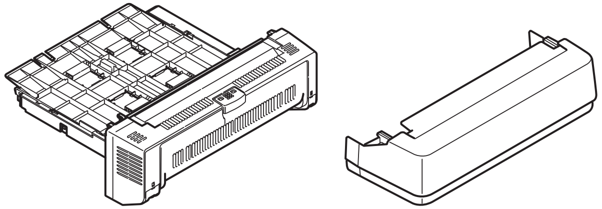
1.3 Composition of optional items

The following optional items are available for the printer.

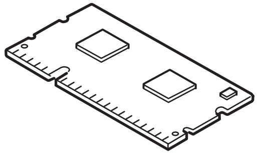
(1) Expanded tray



(2) Duplex-Unit

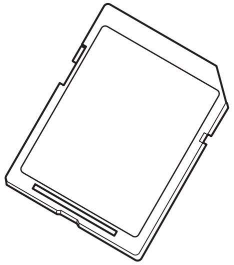


(3) Optional memory



Model name	Capacity(total)
None(standard)	128MB (128MB)
MEM256G	+ 256MB (384MB)
MEM512D	+ 512MB (640MB)

(4) SD memory card



1.4 Specifications

Division	Item	B820	B840
External dimensions	Width	485mm	
	Depth	450mm	522mm
	Height	373mm	
	Mass	Approx. 24kg	Approx. 28kg
Print width	Print width	A3 SEF	
Print speed	Engine speed (A4 LEF)	35PPM	40PPM
Print start	First print time (Tray1)	5 sec (A4 LEF)	
	Warm-up time	19 sec	
	Low-noise mode	Not applicable	
Resolution	LED head	600 dpi	1200 dpi
	Max. input resolution	600 x 2400 dpi	1200 x 1200 dpi
	Output resolution	600 x 2400 dpi	1200 x 1200 dpi
	Gradation	4-gray scale 600x600 dpi	
	Econo-mode	Toner-saving by decreasing lightness	
CPU	Core	Power PC	
	I-cache/ D-cache	32KB/ 32KB	
	Clock	532MHz	
	Bus width	32bit	
RAM	Resident	128MB	
ROM	Program + font	64MB	
RTC	Real-Time clock	Yes	

Division	Item	B820	B840
Power consumption	Power input	110-127VAC (Range 99-140VAC) 220-240VAC (Range 198-264VAC)	
	Power-save mode	15W or less	
	Deep sleep mode	Approx. 1W (1.2W or less)	
	Idle	75W (Average)	
	Normal operation	550W (Depends on the use environment)	
	Peak	1200W	
Operating environment (Temperature)	When operating	10˚C~32˚C, 17˚C~27˚C	
	When not operating	0˚C~43˚C, Power off	
	When stored (for max. 1 yr.)	-10˚C~43˚C, With drum and toner Max. wet-bulb temp.: 35˚C	
	When transported (for max. 1 mo.)	-29˚C~50˚C, With drum and toner Max. wet-bulb temp.: 40˚C	
Operating environment (Humidity)	When operating	20%~80%, 50%~70% Max. wet-bulb temp.: 25˚C	
	When not operating	10%~90% Max. wet-bulb temp.: 26.8˚C, with power off	
	When stored	10%~90%, Max. wet-bulb temp.: 35˚C	
	When transported	10%~90%, Max. wet-bulb temp.: 40˚C	

Division	Item	B820	B840
Duration	Printer life	5 years or 1,200,000 pages (A4 LEF)	
	Print duty (M=L/12, A=L/12/5)	Max. 100,000 pages / mo. Average 20,000 pages / mo.	
	MTBF (2.3% duty)	6,000H	
	MPBF	100,000 pages	
	MTTR	Within 20 minutes	
	Toner life (ISO.IEC 19798)	Enclosed toner : 6000 pages Standard : 6,000 pages Standard (Big) : 20,000 pages	
	Fuser unit life	200,000 pages (A4 size), counter automatically reset	
Operation noise	In operation	54dBA (ISO 7779 front) (when the optional tray is not installed)	
	On standby	37dB (ISO 7779 front)	
	Power-save mode	Background level	
Paper handling	Paper capacity (1st tray)	Legal/universal cassette 580 sheets (64g/m^2)	
	Paper capacity (Expanded tray)	Legal/universal cassette (Optional) 580 sheets (64g/m^2)	
	Paper capacity (Manual/ auto)	Standard multi-purpose tray 110 sheets of paper (64g/m^2) or 10 envelopes	
	Delivery	270 sheets (64g/m^2) face-down/ 110 sheets(64g/m^2) face-up in tray	
	Duplex	Option	Standard
Media weight	Tray 1	60g/m^2 ~176g/m^2	
	Tray2/ 3 (options)	60g/m^2 ~176g/m^2	
	MPT	60g/m^2 ~220g/m^2	

Division	Item	B820	B840
Paper size		A3, A4, A5, A6*, B4, B5, B6*, Letter, Legal13/13.5/14, Executive, Statement*, Postcard**, Double postcard**, Envelope** (DL, C4, C5, C6, Com-9, Com-10, Monarch, Cho-3, Cho-4, You-0, You-4, Kaku2, Kaku3 ,Free), Tabloid, 8K, 16K, Custom*** * : A6, B6, Statement can be used in MPT only. ** : Postcards, Double postcards, Envelopes can be used in MPT only. *** : The max. length is 432mm.	
Min. paper size	Tray1	A5	
	Tray 2 / 3 (Options)	A5	
	MPT	Postcard	
Operator panel	LCD	16 characters in 2 line (Roman alphabet/Japanese kana) No paper size indicated	
	LED (color)	2 (Green x1, dark amber x1)	
	Switch	6	
Status switch/ sensor	Paper out	Yes	
	Paper low	None	
	Toner low	Yes	
	Cover open	Yes	
	Fuser unit temp.	Yes	
	Paper size	Yes (Manual operation)	
	Stacker full	Yes	
	Internal temperature sensor	Yes	
	Environment (Temperature, humidity sensor)	Yes	

Division	Item	B820	B840
Commu-nication interface	Standard (On PCB)	• Soft NIC (Ethernet) • USB 2.0 Full Speed and Hi-Speed I/F • Centronics I/F • ACC I/F	
	Option	None	
	Input/ output switch	Auto	
Emulation	Standard	PCL 6 (XL and 5e), SIDM(IBM5577, ESC/P)	PCL 6 (XL and 5e), PostScript 3 (Emulation), PDF Printing , SIDM(IBM5577, ESC/P)
	Emulation switch	None	
Font	Bit-map Type face	Monotype imaging	
	Scalable font	None	
	Rasterizer	Monotype imaging UFST 5.0(PCL)	Monotype imaging UFST 5.0(PCL) UFST 5.0(PS)
	Bar code	USPS	
	OCR	OCR-A, B	
	Japanese PCL font	None	
	Japanese PS font	None	

Division	Item	B820	B840
Optional item (Detachable)	RAM	256/512MB	
	SD card	16GB	
	Tray mechanism	2nd	2nd/ 3rd
	Cassette	Universal (580 pages(64g/m^2))	
	Duplex print unit	Option	Standard
	Long paper supporter	None	
	Others	Not applicable	
Factory default	OEL/ODA	PDL model	
Other	USB-IF logo	Yes	
	Windows logo	Yes	
	Operation with UPS or inverter	Proper operation by use of a UPS (uninterruptible power supply) or an inverter is not guaranteed. Do not use a UPS and an inverter.	

1.5 Interface specifications

1.5.1 USB interface specifications

1.5.1.1 Outline of USB interface

(1) Basic specifications

USB (Hi-Speed USB supported)

(2) Transmission mode

Full speed (Max. 12Mbps ± 0.25%)

High speed (Max.480Mbps ± 0.05%)

(3) Power control

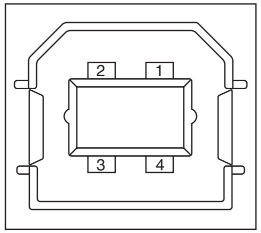
Self power device

1.5.1.2 USB interface connectors and cables

(1) Connector

- Printer side: B-receptacle (Female)
  Upstream port
  Product equivalent to UBR24-4K5C00 (Made by ACON)

Connector pin assignment



- Cable side: B-plug (Male)

(2) Cables

Cable length : USB2.0 type cables 5 meters long or shorter. (Cables 2 meters long or shorter are recommended).

(Shielded cable lines shall be used.)

1.5.1.3 USB interface signals

	Signal name	Function
1	Vbus	Power supply (+5V)
2	D-	For data transfer
3	D+	For data transfer
4	GND	Signal ground
Shell	Shield	

1.5.2 Network interface specifications

1.5.2.1 Outline of network interface

Basic specifications

Network Protocols

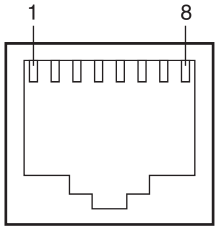
TCP/IP specification	Network layer ARP, IP, ICMP, IPv6, IPSec Transport layer TCP, UDP Application layer LPR, Port 9100, FTP, HTTP, HTTPS, IPP, SNMPv1/v3, TELNET, DHCP/BOOTP, DNS, DDNS, WINS, UPnP, Bonjour, SNTP, SMTP, Windows Rally (WSD Print, LLTD)
NBT/NetBEUI	: SMB, NetBIOS, NetBIOS over TCP
NetWare	: Remote printer mode (maximum eight print servers) Print server mode (maximum eight file servers, 32 queues) Support of encrypted passwords (in print server mode) NetWare 6J/5J/4.1J (NDS, bindery) SNMP
EtherTalk	: ELAP, AARP, DDP, AEP, NBP, ZIP, RTMP, ATP, PAP
IEEE 802.1X	: EAP-TLS, PEAP

1.5.2.2 Network interface connectors and cables

(1) Connectors

100 BASE-TX / 10 BASE-T (Automatically switched, not usable simultaneously)

Connector pin assignment



(2) Cables

RJ-45 connectorized non-shielded twisted-pair cable (Category 5 recommended)

1.5.2.3 Network interface signals

Pin No.	Signal name	Direction	Function
1	TXD+	FROM PRINTER	Transmitting data +
2	TXD-	FROM PRINTER	Transmitting data -
3	RXD+	TO PRINTER	Receiving data +
4	–	–	Not in use
5	–	–	Not in use
6	RXD-	TO PRINTER	Receiving data -
7	–	–	Not in use
8	–	–	Not in use

1.5.3 Parallel interface specifications

Note! The Centronics interface is disabled by factory default. To use it, select Enable in [Centro Menu] - [Centro] in the menu.

1.5.3.1 Parallel interface overview

Item	Details
Supported modes	Compatible mode, nibble mode, ECP mode
Data bit length	Compatible mode: 8 bit, Nibble mode: 4 bit, ECP mode: 9 bit

1.5.3.2 Connector and cable of parallel interface

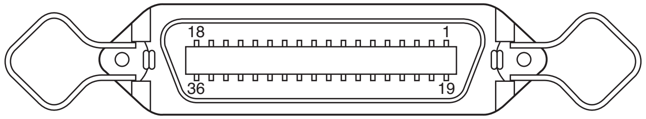
(1) Connector

Printer side: 36-pole connector (female)

Product equivalent to 57-40360-830B-D29 (DDK Ltd.)

Cable side: 36-pole connector (male)

Product equivalent to 57-30360 (DDK Ltd.)



Pin arrangement on the interface cable side

(2) Cable

Use a cable of 1.8 m or less.

(Use a shielded twisted-pair cable for noise prevention.)

1.5.3.3 Parallel interface signals

Pin No.	Signal name	Signal direction	Compatible	Nibble	ECP
1	$\overline{\text{DATA STROBE}}$	→ PR	nStrobe	HostClk	HostClk
2-9	DATA BIT - n	→ PR	Data 1 (LSB) - 8 (MSB)		
10	$\overline{\text{ACKNOWLEDGE}}$	← PR	nAck	PtrClk	PeriphClk
11	BUSY	← PR	Busy	PtrBusy	PeriphAck
12	PAPER END	← PR	Perror	AckDataReq	nAckReverse
13	SELECT	← PR	Select	Xflag	Xflag
14	$\overline{\text{AUTO FEED}}$	→ PR	nAutoFd	HostBusy	HostAck
15	-	-	-		
16	0V	-	Logic Gnd		
17	CHASSIS GROUND	-	Chassis Gnd		
18	+5V	← PR	Peripheral Logic High		
19	0V	-	Signal Ground (nStrobe)		
20-27	0V	-	Signal Ground (Data 1-8)		
28	0V	-	Signal Ground (Perror,Select,nAck)		
29	0V	-	Signal Ground (Busy,nFault)		
30	0V	-	Signal Ground (nAutoFd,nSelectIn,nInit)		
31	$\overline{\text{INPUT PRIME}}$	→ PR	nInit	nInit	nReverse-Request
32	$\overline{\text{FAULT}}$	← PR	nFault	nDataAvail	nPeriph-Request
33	0V	-	-		
34	-	-	-		
35	Hi Level	← PR	Pulled up to +5V through 3.3Kohm		
36	$\overline{\text{SEL-IN}}$	→ PR	nSelectIn	1284 Active	1284 Active

1.5.3.4 Parallel interface levels

Low level:	0.0V to +0.8V
High level:	+2.4V to +5.0V

1.5.4 ACC interface specifications

USB A plug (male) connector

Connection devices

Card reader/writer that is certified by Oki Data.

Printer supply power: Maximum 500mA

2. DESCRIPTION OF OPERATION

2.1 Electrophotographic process mechanism 17
2.2 Printing process 20

2.1 Electrophotographic process mechanism

(1) Electrophotographic process

The electrophotographic process is explained briefly below:

1. Charging

   A voltage is applied to the CH roller to electrically charge the surface of the OPC drum.

2. Exposure

   The LED head radiates light onto the charged OPC drum in accordance with the image signal. The electric charge of the radiated part of the OPC drum surface attenuates depending on the intensity of the light, thus forming an electrostatic latent image on the OPC drum surface.

3. Development

   Charged toner adheres to the electrostatic latent image of the OPC drum by electrostatic power, and forms a visible image on the OPC drum surface.

4. Transfer

   Paper is placed over the OPC drum surface and an electric charge is applied to it from the backside by the transfer roller, so that the toner image is transferred to the paper.

5. Drum cleaning

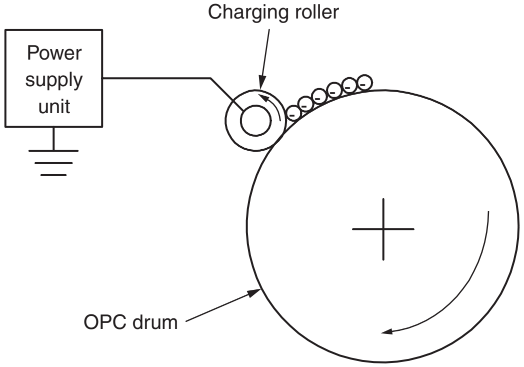
   The drum cleaning blade removes toner remaining on the OPC drum after the transfer.

6. Fusing

   Heat and pressure are applied to the toner image on the paper to promote its fusion.

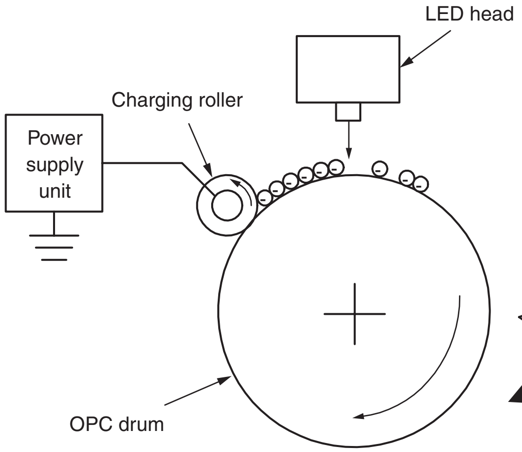
(2) Charging

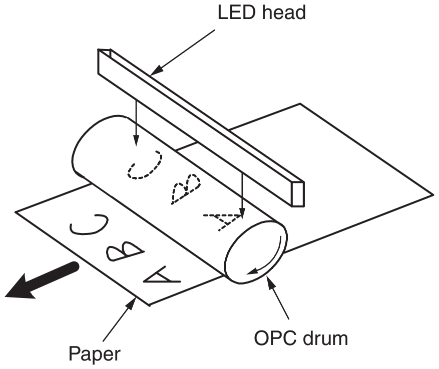
A voltage is applied to the charging roller, which is placed in contact with the OPC drum surface, to charge the OPC drum surface.



(3) Exposure

The light emitted from the LED head is radiated onto the charged surface of the OPC drum. The charge of the radiated part of the OPC drum attenuates according to the intensity of the light, forming an electrostatic latent image on the OPC drum surface.

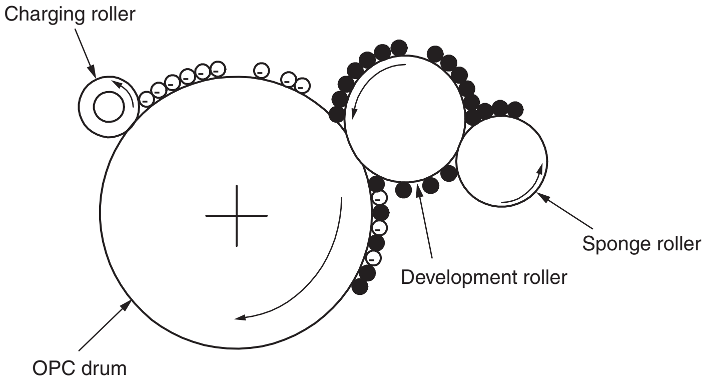




(4) Development

Toner adheres to the electrostatic latent image on the drum surface, thereby turning the electrostatic latent image into a toner image.

1. The sponge roller allows the toner to stick to the development roller.

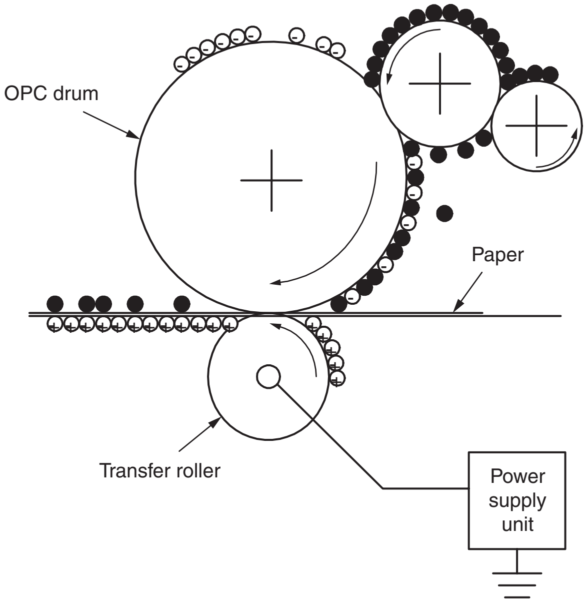

Charging roller
Sponge roller
Development roller
OPC drum

2. The electrostatic latent image on the OPC drum surface is turned into a visible image by the toner.

(5) Transfer

The transfer roller is made of conductive sponge and is designed to bring paper into intimate contact with the image drum surface. A sheet of paper is placed over the OPC drum surface, and an electric charge is given to the paper from its backside by the transfer roller.

When a high voltage is applied to the transfer roller from the power source, the charge induced on the transfer roller moves on to the surface of the paper through the contact part between the transfer roller and the paper, the toner being attracted to the paper surface from the OPC drum surface.


OPC drum
Paper
Transfer roller
Power supply unit

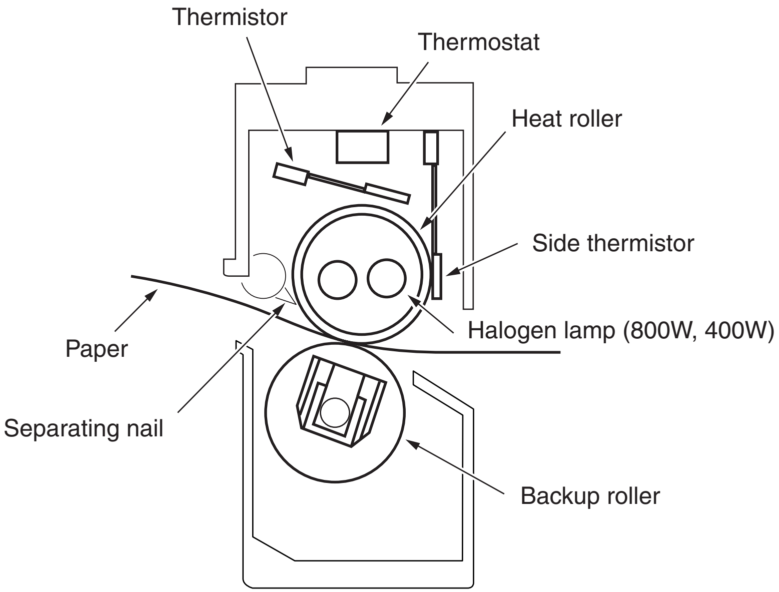
(6) Fusing

After being transferred, a toner image not yet fused is fused on paper by heat and pressure when the paper passes between the heat roller and the backup roller. The heat roller is coated with Teflon and is equipped with halogen lamps (800W and 400W), which generate heat.

The fusing temperature is controlled according to a temperature that is detected with the thermistor, located above the center of the heat roller and not contacting with the heat roller, and a temperature that is detected with the side-thermistor located to contact with the edge of the backup roller, and the heat roller temperature is adjusted to a temperature according to paper thickness specified for each menu.

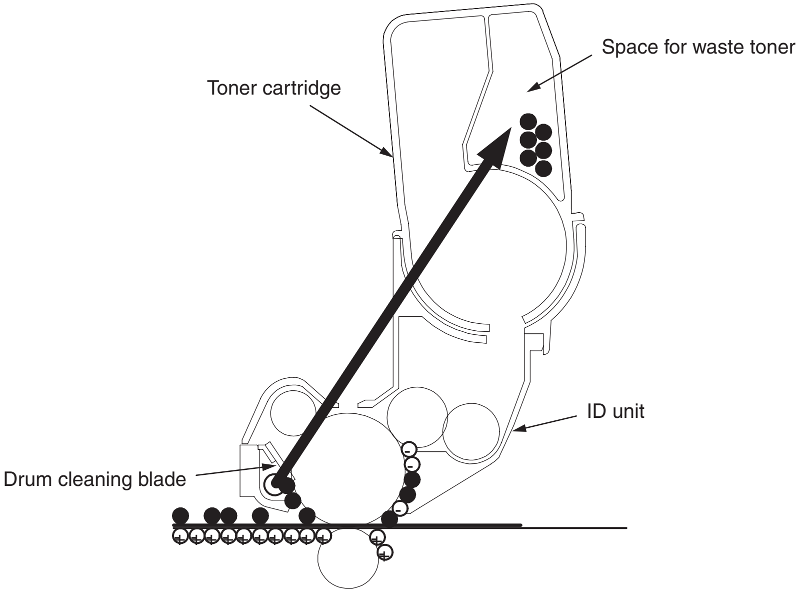
For safety purposes, voltage supply to the heater is cut off by opening the thermostat when the heat roller temperature rises abnormally.

The backup roller is pressed against the heat roller with press springs on both sides.


Thermistor
Thermostat
Heat roller
Side thermistor
Halogen lamp (800W, 400W)
Paper
Separating nail
Backup roller

(7) Drum cleaning

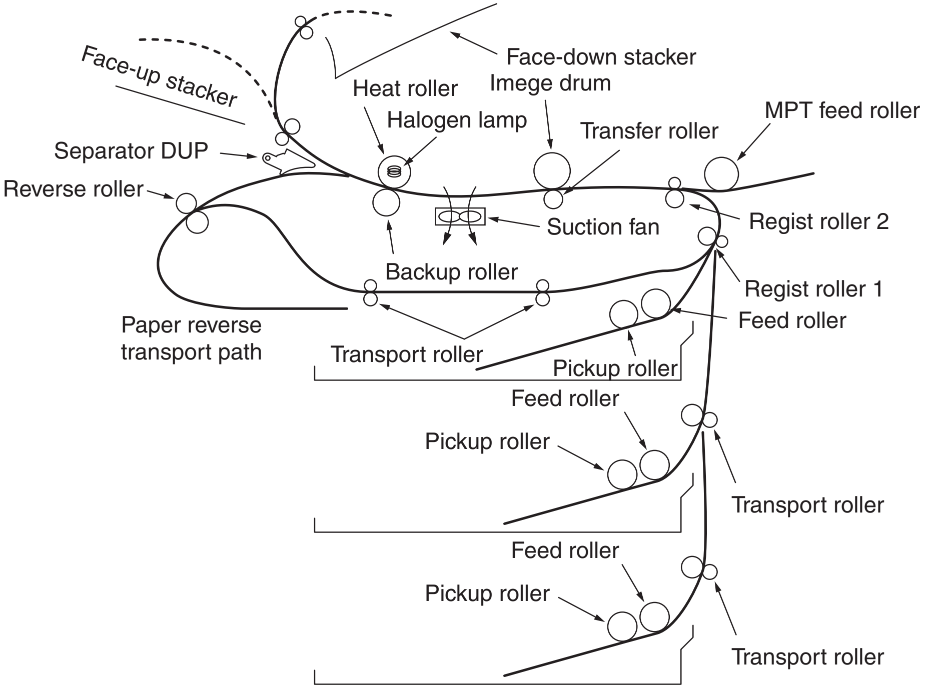
Unfixed toner remaining on the OPC drum is removed by the drum cleaning blade and collected into the waste toner area of the toner cartridge.


Space for waste toner
Toner cartridge
ID unit
Drum cleaning blade

2.2 Printing process

The paper fed from Tray1, Tray2 or Tray3 is carried by the paper feed roller, the registration roller 1, and the transport roller. When the paper is fed from the MPT, it is carried by the MPT paper feed roller and the registration roller 2. Then, a not-yet-fused toner image is created on the paper that has been transported to the nip between the image drum and the transfer roller through the electrophotographic process, and the paper is transported to the fuser unit being sucked downward by a suction fan. The toner image created on the paper is fused by heat and pressure as the paper passes through the fuser unit. After the image has been fixed, the paper is ejected to a face-up stacker or to a face-down stacker, according to the outputting method selected by opening or closing of the face-up stacker.

While the above refers to the one-sided print operation of the printer, its operation in two-sided print will be explained below. When two-sided print is conducted, the paper that has passed through the fuser unit following first one-sided print is sucked into the Duplex unit by the separator DUP. After entering the paper reverse transport path, the paper is carried from there to the inside of the Duplex unit by the inverting operation of the reverse roller. Then, after passed through the Duplex unit by the transport roller that is located on the transport path inside the Duplex unit, the paper is fed along the paper feed route of the Duplex unit to eventually merge the same route that comes from the tray. From here on, the same operation as that of one-sided print of paper fed from the tray takes place.


Face-up stacker
Face-down stacker
Heat roller
Imege drum
Halogen lamp
Transfer roller
MPT feed roller
Separator DUP
Reverse roller
Suction fan
Regist roller 2
Backup roller
Regist roller 1
Feed roller
Paper reverse transport path
Transport roller
Pickup roller
Feed roller
Pickup roller
Transport roller
Feed roller
Pickup roller
Transport roller

(1) Paper feed from 1st Tray

1. As illustrated in Figure 2-1, after the main motor is driven clockwise and the feed clutch comes ON, the paper is fed from the 1st tray. (When the feed clutch is ON, the feed roller is driven.)
2. After causing the IN1 sensor to come ON, the paper is further carried over a certain distance to finally hit the registration roller 1. (This corrects skew of the paper.)
3. As shown in Figure 2-2, it causes the registration clutches 1 and 2 to come ON and has the registration rollers 1 and 2 carry the paper. (When the registration clutches 1 and 2 are ON, the registration rollers 1 and 2 are driven.)

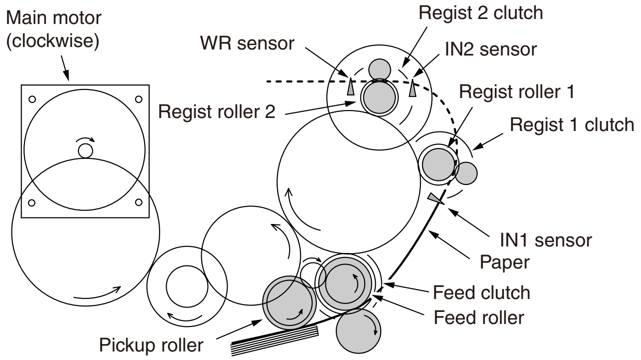

Main motor (clockwise)
WR sensor
Regist 2 clutch
IN2 sensor
Regist roller 1
Regist roller 2
Regist 1 clutch
IN1 sensor
Paper
Feed clutch
Feed roller
Pickup roller

Figure 2-1

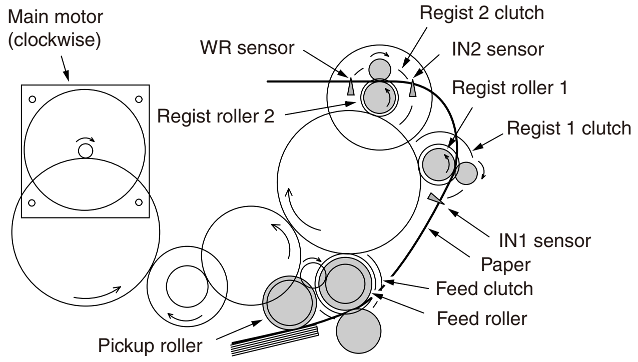

Main motor (clockwise)
WR sensor
Regist 2 clutch
IN2 sensor
Regist roller 1
Regist roller 2
Regist 1 clutch
IN1 sensor
Paper
Feed clutch
Feed roller
Pickup roller

Figure 2-2

(2) Paper feed from MPT

1. As illustrated in Figure 2-3, after the main motor is driven clockwise and the MPT clutch comes ON, the paper is fed from the MP tray. (When the MPT clutch is ON, the MPT roller is driven.)
2. After causing the IN2 sensor to come ON, the paper is further carried over a certain distance to finally hit the registration roller U. (This corrects skew of the paper.)
3. As shown in Figure 2-4, it causes the registration clutch 2 to come ON and has the registration roller 2 carry the paper. (When the registration clutch 2 is ON, the registration roller 2 is driven.)

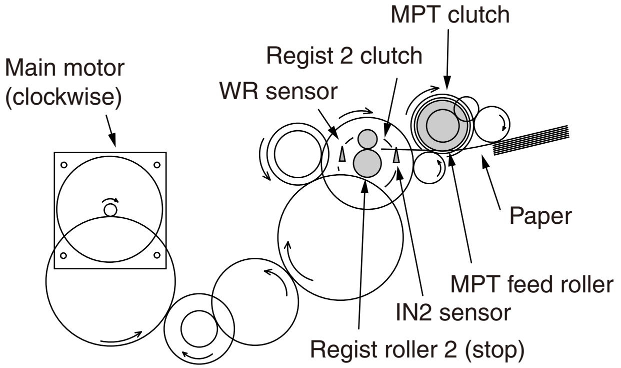

MPT clutch
Main motor
(clockwise)
Regist 2 clutch
WR sensor
Paper
MPT feed roller
IN2 sensor
Regist roller 2 (stop)

Figure 2-3

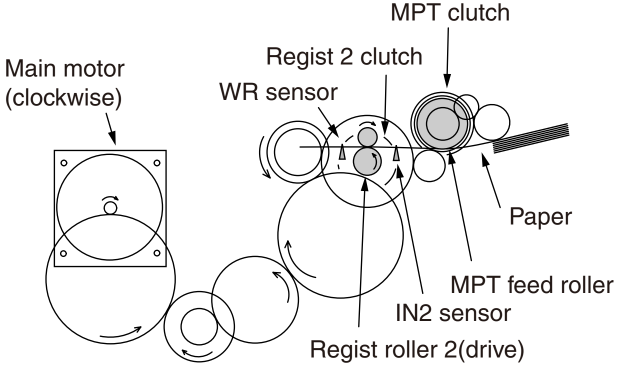

MPT clutch
Main motor
(clockwise)
Regist 2 clutch
WR sensor
Paper
MPT feed roller
IN2 sensor
Regist roller 2(drive)

Figure 2-4

(3) Transport

As the main motor runs clockwise, the transfer roller and the drum are driven. The transfer roller is placed immediately underneath the drum. As the specified voltage is applied, the transfer roller carries paper to the fuser unit as transferring the toner images present on the drum to the paper.

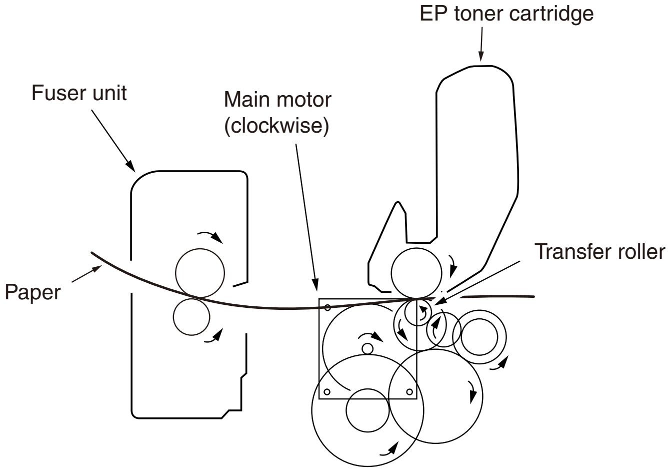

EP toner cartridge
Fuser unit
Main motor
(clockwise)
Transfer roller
Paper

Figure 2-5

(4) Fuser unit and paper ejection

1. As illustrated in Figure 2-6, the fuser unit and the eject roller are driven by the main motor. As the main motor rotates (clockwise), the heat roller rotates. This roller fixes toner images by heat and pressure.
2. At the same time, the eject rollers rotate and eject printouts.

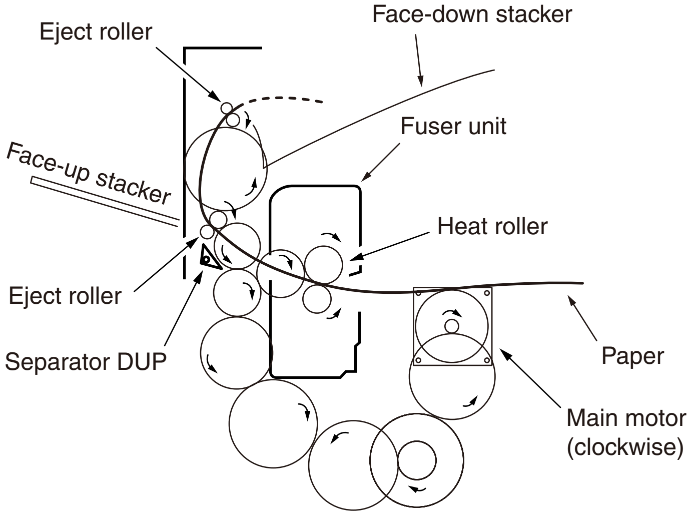
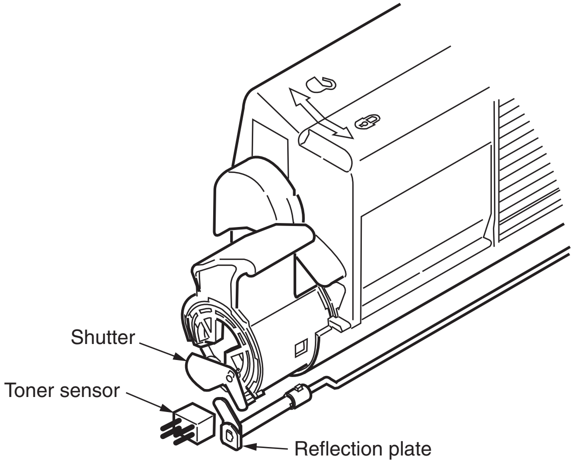


Figure 2-6

Principle of toner sensor detection

Toner LOW is detected by the toner sensor (Reflection sensor) installed inside the printer. The reflection plate is mounted inside the ID and rotates in synchronization with toner agitation.

Moreover, the ID has a shutter fitted. The shutter is synchronized with the operation lever of the toner cartridge, and the toner sensor can detect that the toner cartridge has been loaded properly. Detection may not take place normally, and a toner sensor error may be issued, if the reflection plate or toner sensor is stained with toner, or if the ID unit and toner sensor do not remain exactly opposite to each other in their positions.



Principle of the toner counter

After image data is developed to binary data that the printer can print, the LSI counts the data as a number of print dots. The amount of toner consumed is calculated from that count value, and the remaining amount of toner is thus indicated. As opposed to this, the toner LOW detection by the toner sensor is implemented when the toner amount remaining inside the ID unit physically decreases to below a certain level.

Principles of ID and fuser counters

ID counter:	One count represents the value that results from dividing the amount of rotation of the drum by three when three A4-size sheets are printed continuously.
Fuser counter:	One count is registered when paper is shorter than the length of Legal 13-inch paper. When paper is longer than that, the count number is determined by the number of times the Legal 13-inch paper length is exceeded. (Rounding up of decimal fractions)

Counter specifications

	Total page count	MPT page count	Tray 1 page count	Tray 2 page count	Tray 3 page count	page count
Description	Total number of prints	Number of print media hopped from MPT	Number of print media hopped from Tray 1	Number of print media hopped from Tray 2	Number of print media hopped from Tray 3	Total number of prints
Count method: A4-basis or size independence	Count up after passing the writing sensor	Count up if MPF (MPT) hopping is finished successfully	Count up if Tray 1 hopping is finished successfully	Count up if Tray 2 hopping is finished successfully	Count up if Tray 3 hopping is finished successfully	The number of print media passing the fuser unit is counted when each job is finished. (1*) The value is counted on an A4/Letter basis. Refer to A4/Letter conversion table (on the next page).
Operation when paper has jammed	Printed pages are not counted when a paper feed (hopping) jam or a feed jam (380) occurs. Printed pages are counted when any jam except the said jams occurs. Since the total number of prints is counted up when the front end of print media passes the writing sensor, a feed jam (380) is also included into the limits for counted according to its jam type.					Printed pages are not counted if paper jams before passing the fuser. They are counted if prints jam after passing the fuser.
Operation for Duplex	Front/back count (+2)	Only front count (+1)				A4 / Letter : The count increases by two. A3 : The count increases by four.
Reset condition	None	None				(1) Replacement of ROM with another one of a different version. (2) Change of the shipping destination (3) Running of [RST MAIN CNT/RST GROUP CNT/RST SUPPLIES CNT] of the [PRINT STATISTIC MENU] (4) Replacement of a CU/PU board
Value storage destination	PU	PU	PU	PU	PU	CU
Menu/MenuMap output	○	○	○	○	○	○
EngineMenuMap output	○	○ (*2)	○ (*2)	○ (*2)	○ (*2)	–

*1. The count is not updated if the power is turned off when a paper jam occurs.

*2. EngineMenuMap outputs Engine Menu Print (the first page) and Engine EEPROM Dump Print (the last page), and the number of sheets of paper fed from each tray is described only in the latter one (Dump page only).

A4/Letter conversion table

Each count should increase, in relation to every sheet of paper, by the values in the table below.

Paper size	Simplex	Duplex
LETTER	1	2
EXECUTIVE	1	2
STATEMENT	1	2
LEGAL14	1	2
LEGAL13.5	1	2
LEGAL13	1	2
TABLOID	2	4
A3	2	4
A4	1	2
A5	1	2
A6	1	2
B4	2	4
B5	1	2
COM-9	1	2
COM-10	1	2
MONARCH	1	2
DL	1	2
C6	1	1
C5	1	2
C4	1	2
HAGAKI	1	2
OUFUKU-HAGAKI	1	2
CUSTOM (LENGTH ≤ 210mm)	1	2
CUSTOM (210 < LENGTH ≤ 432mm)	2	4
ENVELOPE1 (Choukei 3)	1	2
ENVELOPE2 (Choukei 4)	1	2
ENVELOPE3 (Youkei 4)	1	2
ENVELOPE8 (Youkei 0)	1	2
ENVELOPE4 (Envelope A4)	1	2
ENVELOPE5 (Kakugata 2)	2	4
ENVELOPE6 (Kakugata 3)	1	2

3. INSTALLATION

3.1 Cautions, and do’s and don’ts 26
3.2 Unpacking procedure 27
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3.4 List of components and accessories 29
3.5 Assembly procedure 30
3.6 Printing of the MENU MAP 39
3.7 Connection methods 40
3.8 Checking of paper used by the user 42

3.1 Cautions, and do’s and don’ts

⚠Warning

- Do not install the printer in any high-temperature location or a near heat source.
- Do not install the printer in a location where chemical reaction may occur (laboratory and the like).
- Do not install the printer in the proximity of inflammable solvents, such as alcohol and paint thinner.
- Do not install the printer within reach of children.
- Do not install the printer on an unstable surface (e.g., on a rickety bench or on a slanting place).
- Do not install the printer in a location with moisture or heavy dust, or in direct sun.
- Do not install the printer in an environment with sea wind or corrosive gas.
- Do not install the printer in a location with heavy vibration.
- In the event that the printer is inadvertently dropped or its cover is damaged, remove the power plug from the power outlet and contact the customer information center.
  Such mishap could lead to an electric shock, fire or injury.
- Do not connect any power cord, printer cable or grounding wire in any other manner than the way specified in the manual. Failure to observe the above could result in fire.
- Do not stick in an object into the vent hole.
  Such action could lead to an electric shock, fire or injury.
- Do not place a glass filled with water or the like on the printer.
  Such action could lead to an electric shock or fire.
- When the printer cover is opened, be careful not to touch the fuser unit.
  It may cause burns.
- Do not throw the toner cartridges or the image drum cartridges into fire.
  Dust explosion could cause burns.
- Do not use a highly combustible spray near the printer.
  It may case a fire because the printer contains parts that get extremely hot.
- In the event that the cover becomes unusually hot, emits smoke, bad smell, or abnormal noise, remove the power plug from the power outlet and contact the customer information center.
  It may lead a fire.
- If water or any other liquid enters the inside of the printer, remove the power plug from the power outlet and contact Customer Center.
  Fire could break out.

⚠Warning

- Do not operate or disassemble the printer in any other manner than the way specified in the manual.
  Failure to observe this warning could result in an electric shock, fire or injury.

⚠Caution

- Do not install the printer in a location where its vent hole is blocked.
- Do not install the printer directly on a shag carpet or rug.
- Do not install the printer in a sealed room or other location with poor ventilation or permeability.
- Make sure to ventilate sufficiently when continuously using the printer in a small room for a long time.
- Install the printer away from a strong magnetic field or noise source.
- Install the printer away from a monitor or TV.
- To move the printer, hold both sides of the printer.
- This printer, which weighs approximately 28 kg, should be lifted by two or more people.
- While the printer power is on or the printer is printing, do not come close to the paper exit. Such action could lead to injury.

⚠Danger

- A CR2032 lithium-ion battery is used on the main control board of this printer.
- Insulate CR2032 lithium-ion batteries with tape or such to dispose of them.
- CR2032 lithium-ion batteries may cause a fire or explode when mixed with metals or other types of batteries.
- Dispose of CR2032 lithium-ion batteries in accordance with municipality's ordinances or guidelines.

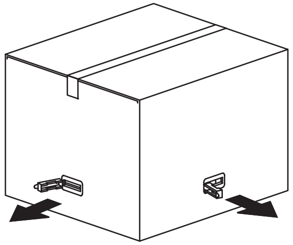
When the precautionary notes concerning the installation and operation are explained, the user should be referred to the precautionary notes given in the user’s manual. Especially, give thorough explanation on the power cord and the grounding wire.

3.2 Unpacking procedure

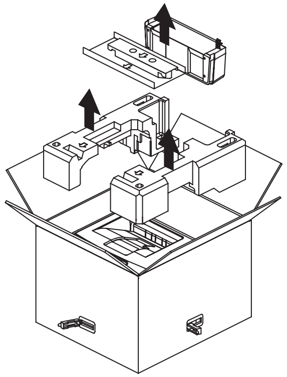
⚠**Warning**	Personal injury may occur.	⚠

Since the printer weights approximately 28 kg, it should be lifted by two or more people.

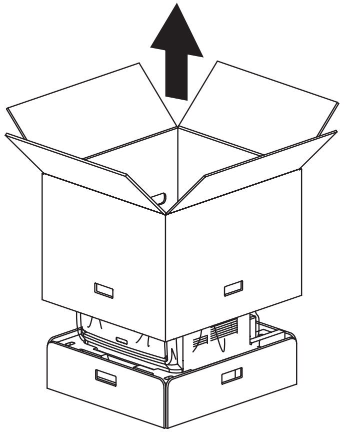
- Remove the four handles from the sides of the box,.



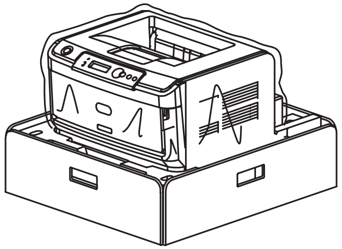
- Take out the accessories supplied with the printer and the pads.



- Lift the corrugated fiberboard box.



- Take out the printer.



3.3 Printer installation instructions

- Install the printer in a location where the following temperature and humidity are met:

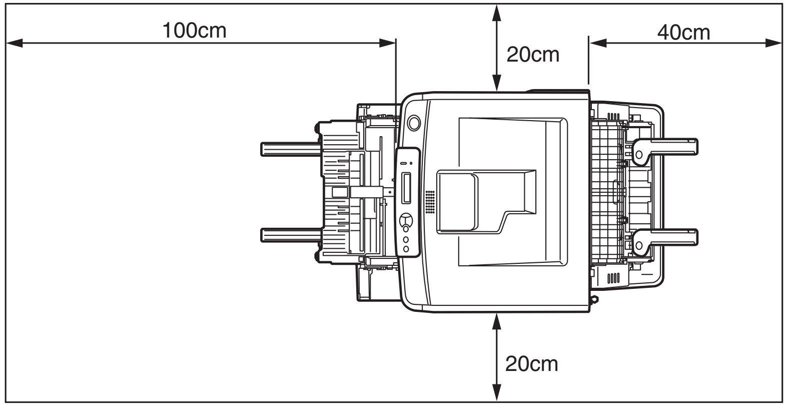
Ambient temperature:	10 - 32°C
Ambient humidity:	20 - 80 % RH (relative humidity)
Maximum wet-bulb temperature:	25°C

- Exercise caution to avoid dew condensation.
- If the printer is installed in a location with ambient relative humidity below 30%, use a humidifier or antistatic mat.

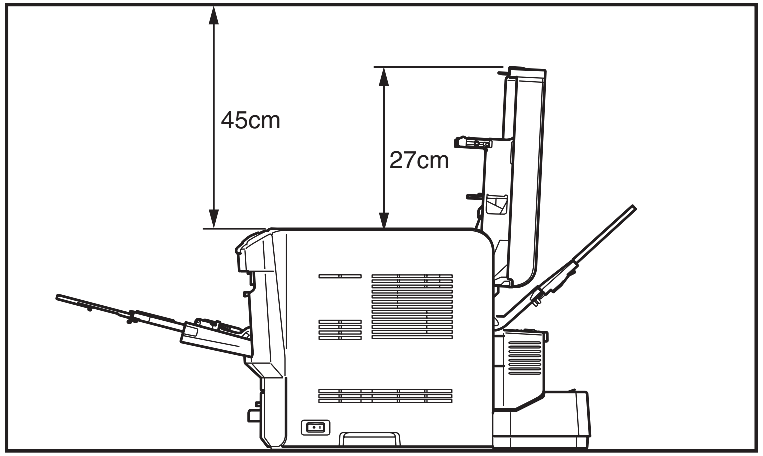
Installation space

- Place the printer on a flat desk large enough to accommodate its footings.
- Provide enough spaces around the printer.

Plan view



Side view



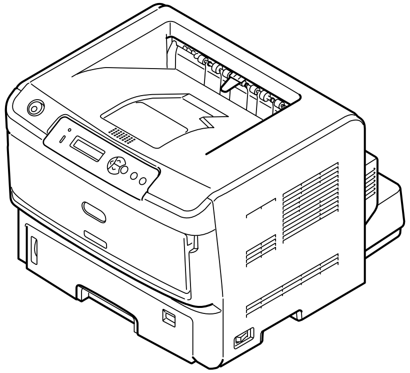
3.4 List of components and accessories

- Check to make sure that the components are free from damage, dirt or other irregularities in their appearance.
- Ensure that none of the accessories to the components is missing and that they are free from breakage or other flaw.
- If any irregularity is discovered, contact the user management section for instructions.

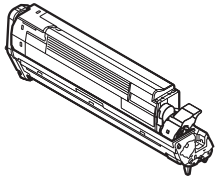
⚠**Warning**	Personal injury may occur.	⚠

Since the printer weights approximately 28 kg, it should be lifted by two or more people.

☐ Printer (main unit)

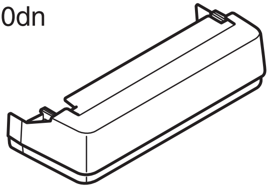


☐ EP Toner cartridges (installed in the printer)

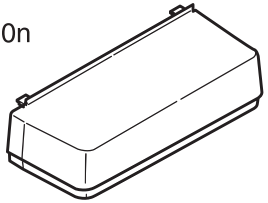


☐ Cassette Cover (one)

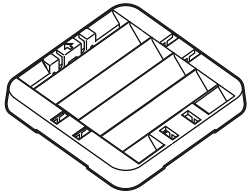
B840dn



B820n



☐ Exhaust louver



☐ Printer software CD-ROM

☐ Power cord

☐ User’s manual (Setup)

☐ User’s manual (CD-ROM)

☐ Quick Guide

☐ Bag for Quick Guide

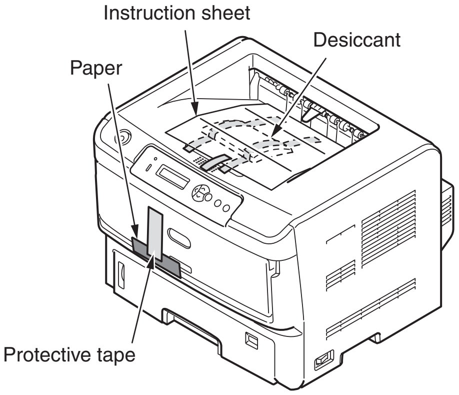
Note! No printer cable is supplied with the printer.

3.5 Assembly procedure

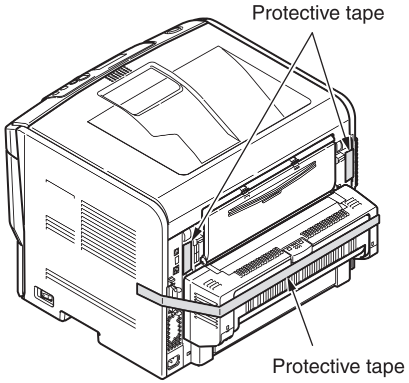
3.5.1 Assembly of the printer main unit

Removing the protective materials

(1) Remove the protective tapes ,instruction sheet, desiccant, paper from the printer.

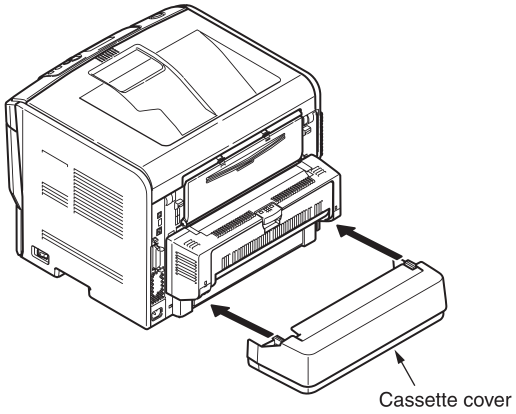

Instruction sheet
Desiccant
Paper
Protective tape

(2) Remove the protective tapes from the back of the printer.


Protective tape
Protective tape

Install the cassette cover

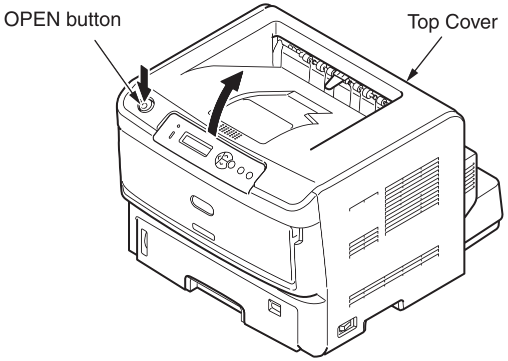
(1) Install the cassette cover to the back of the printer.


Cassette cover

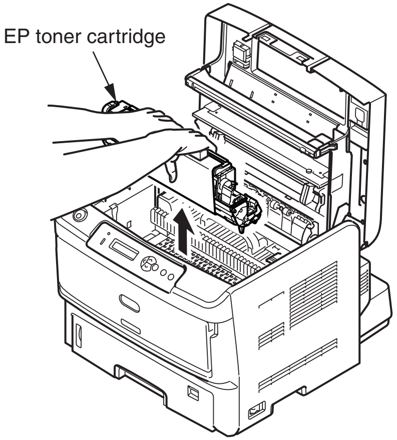
Installing the EP toner cartridges

Note!
- Hold the EP toner cartridge with hands as it is slippery with a film.
- Be sure to set the EP toner cartridge that is supplied with the printer. With the EP toner cartridge supplied with the printer, the printer can print about 6,000 A4 pages of the ISO/IEC19752 standard print pattern.

(1) Press the OPEN button to open the top cover.

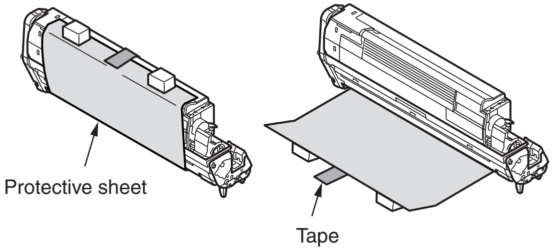


(2) Take out the EP toner cartridge gently.

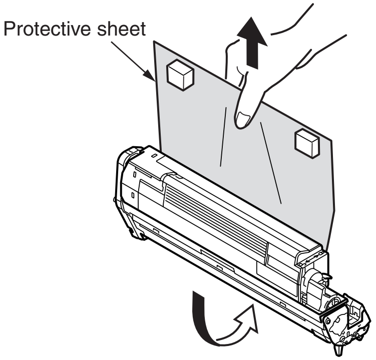


Note!
- The image drum (green cylinder part) is very sensitive to scratches, therefore, special care should be taken on handling.
- Do not expose the EP toner cartridges to direct sunlight or strong light (approx. 1500 lux or above). Even under room light, do not leave them exposed for five minutes or longer.

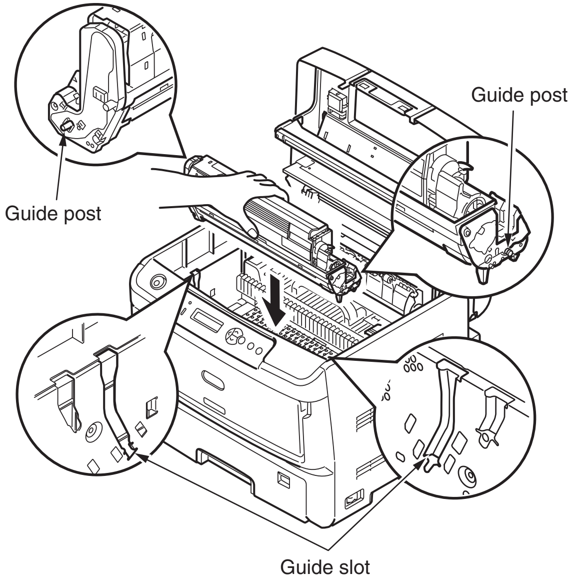
(3) Remove the tape holding the protective sheet from the EP toner cartridge.



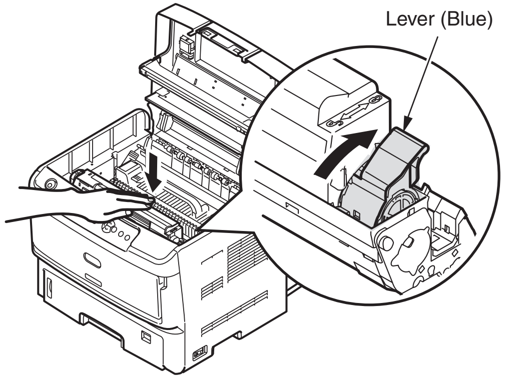
(4) Pull the sheet out in the direction of the arrow from the EP toner cartridge.



(5) Fit both guideposts of the EP toner cartridge into guide grooves of the printer, and set the EP toner cartridge back into the printer.



(6) Hold the top of the EP toner cartridge by hand so that it doesn't lift up, and turn the knob on the right until it stops in the direction of 🔒 marked on the EP toner cartridge.



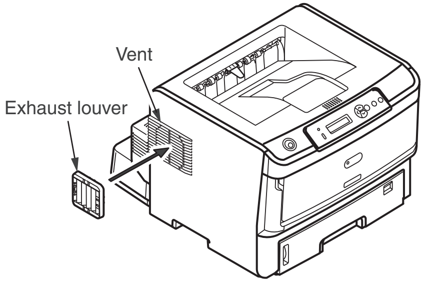
(7) Close the top cover.

Note!
- Print quality may deteriorate if the EP toner cartridge is not fixed properly.
- Check to make sure that the knob has been turned fully as it cannot turn any more in the direction of 🔒 marked on the EP toner cartridge.
- Be sure to use the EP toner cartridge supplied with the printer first. Otherwise, the indicator starts displaying wrong service life of EP toner cartridges.

Installing the Exhaust louver

Memo
- If it is not necessary to change the direction of exhaust, there is no need to install the exhaust louver.
- The exhaust louver can be installed in any of four orientations.

(1) Insert the exhaust louver into the vent.

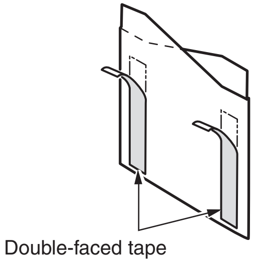


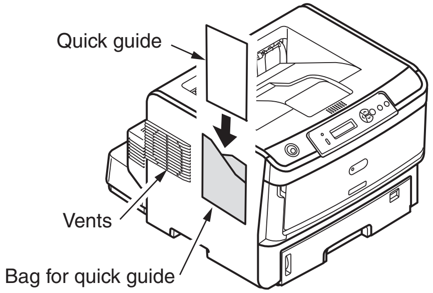
Storing Quick Guide

Stick a bag for Quick Guide on the printer to store Quick Guide.

(1) Remove double-faced tapes (two places) from the back of the bag.

(2) Stick the bag for Quick Guide on the printer.





Loading paper in the paper cassette

(1) Pull out the paper cassette (tray1).

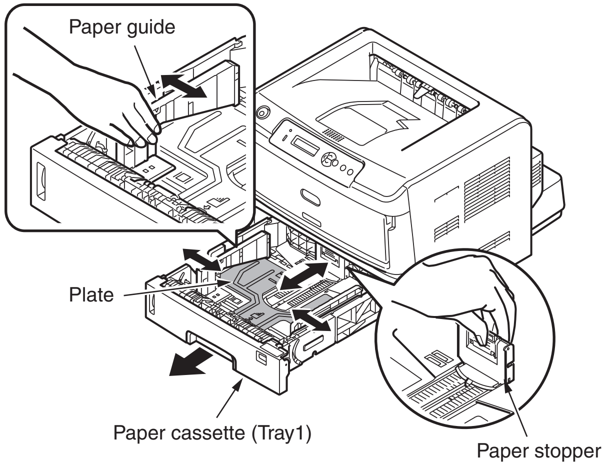
Memo • The paper cassette stops at a designated position when pulled out from the printer.

- To remove the paper cassette from the printer, pull it as lifting the front side of the paper cassette.

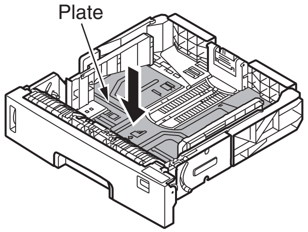
(2) Adjust the paper stopper and paper guide to the size of the paper being used.

Note! • To use A4 or larger size paper in the paper cassette for Tray 1, pull out the rear side of the cassette.

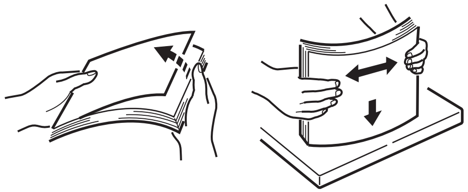
- Do not remove the cork attached to the metal plate.



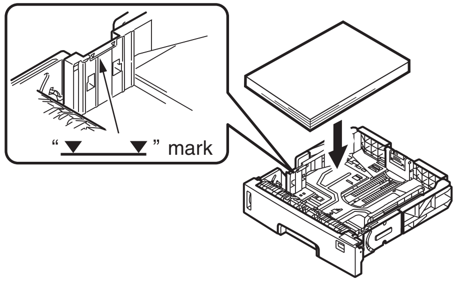
(3) If the metal plate under paper of the paper cassette is lifted, press it until it is locked with a click and then insert the paper cassette into the printer. If inserting it into the printer with the metal plate lifted, that may cause failures.

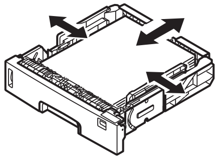


(4) Fan the edges of paper stack and align the edges of the stack on a level surface.



(5) Load the paper with the print side facing down and check to make sure that paper is fitted to the paper guides.



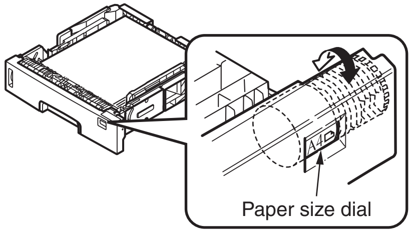


Note! • Set paper in the near side of the paper cassette.

- Do not press paper stopper (rear) too hard not to bend paper.
- Set paper so as not to be over the "▽" marks on the paper guide. (As a guide, the total thickness of 580 sheets of 64g/m2 paper is 53 mm or less.)

(6) Turn the paper size dial to the size of the paper you load.

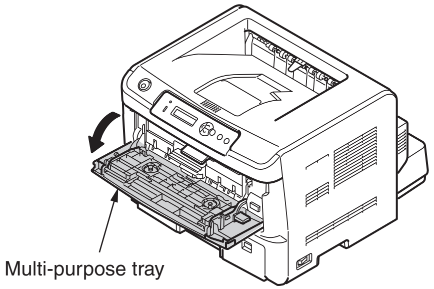
Memo To use a standard size not included in the paper size dial on the paper cassette, set Others of the paper size dial and select the standard paper size from [Tray n others] of [Media Menu] of the printer.

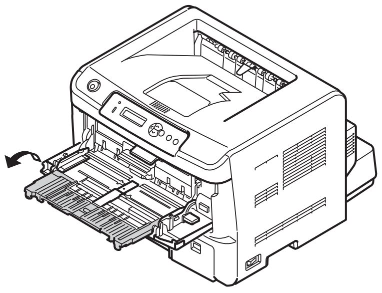


(7) Return the paper cassette to the printer.

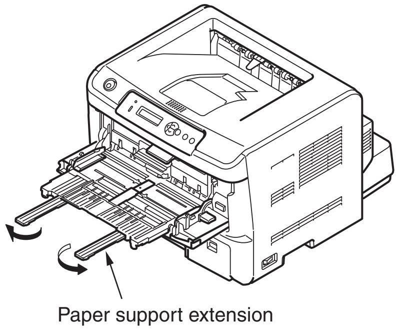
Loading paper in the multi-purpose tray

(1) Open the multi-purpose tray.


Multi-purpose tray

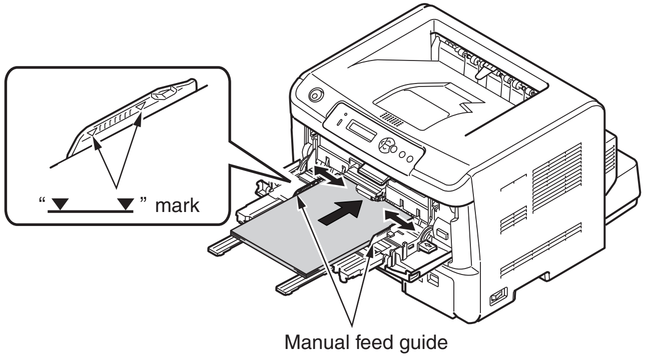


(2) Open the paper supporter.

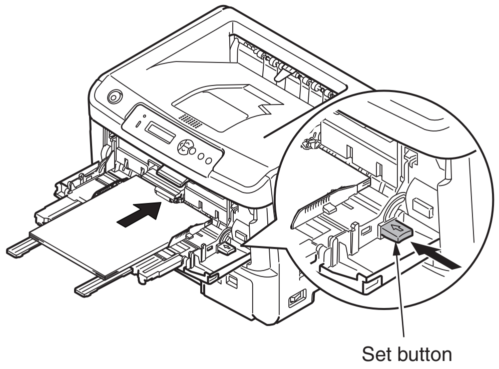

Paper support extension

(3) Pick up the paper, move the manual feed guide to the paper size.

Note! Do not allow the level of paper to pass the "▽" marks on the manual feed guide.


“ ▼ ▼ ” mark
Manual feed guide

(4) Insert the paper, print-face up, along the manual feed guide straight as far as it will go. And press the set button.



3.5.2 Connection of the power cable

Power supply conditions

- Observe the following conditions:
  AC: 220-240V ± 10 %
  Power frequency: 50 Hz or 60 Hz ± 2 %
- If the available power is unstable, use a voltage regulator of the like.
- The maximum power consumption of this printer is 1,200W. Ensure that the power source offers an ample margin in the power capacity.
- Proper operation with a UPS (uninterruptible power supply) or inverter is not guaranteed. A warning to not use either UPS or inverter should be given to the user.

⚠Warning	It may expose you to electric shocks or cause a fire.

- Installation and removal of the power cord and the grounding wire must be performed after turning the switch to OFF.
- The grounding wire should be connected to the specified grounding terminal. Never connect the grounding wire to a water pipe, gas pipe, or a telephone line ground, or to a lightning rod or the like.
- Hold the power plug of the power cord to plug in or unplug the cord.
- Insert the power plug securely into a receptacle as far as it will go.
- Do not insert or remove the power plug with wet hands.
- Lay the power cord in a location where it is not likely stepped on, and avoid placing anything on the power cord.
- Do not bundle or tie the power cord.
- Do not use a damaged power cord.
- Avoid many loads on one electrical outlet.
- Do not connect the printer to the same power outlet shared by other electric appliances. Especially, if the printer is connected to the same power outlet in conjunction with an air-conditioner, copy machine or shredder, electric noise may cause false operation of the printer. If it is inevitable to connect them to the same power outlet, use a commercial noise filter or noise-cut transformer.
- Operate the printer with the supplied power cord only. Do not use an extension cord. If it is inevitable to use an extension cord, use one with rating of 15A or more.
- Use of an extension cord may hinder the printer from operating normally because of a voltage drop.
- Be sure to use the power cord supplied with the printer. Do not use a power cord provided for any other products.
- The power cord supplied with the printer is provided only for the printer. Do not use the power cord for other products.
- Do not turn off the power or remove the power plug while the printer is printing.
- If the printer is going to be placed out of use for an extended period of time due to a long spell of holidays or a trip out of town, unplug the power cord.

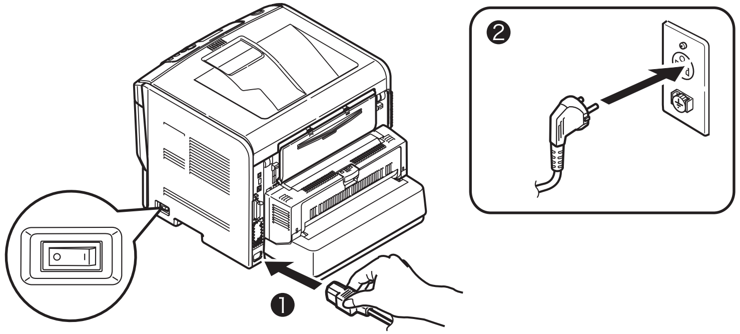
About the connections of the power cord and grounding wire, the user should be given thorough explanation on the basis of the user's manual.

Connecting the power cord

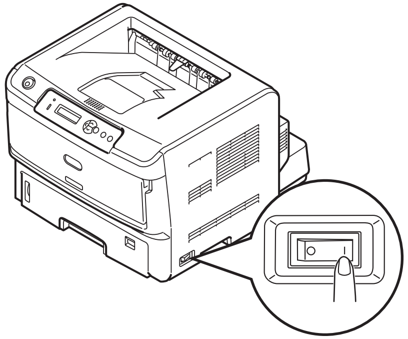
Note! Ensure that the power switch is in OFF (O).

(1) Insert the power cord into the printer.

(2) Inset the power plug into the power outlet.



Pressing on (I) of the power switch



[ONLINE] will appear when the printer has started up completely.

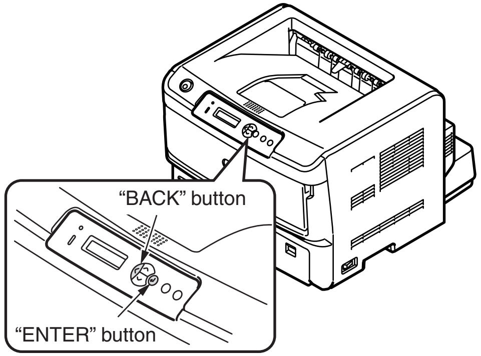
Turning off the power

Note! Turning off the power without taking proper shutdown steps may damage and disable the printer. Be sure to follow the steps below.

(1) Press the [BACK] button for at least four seconds to display [SHUTDOWN START YES / NO].

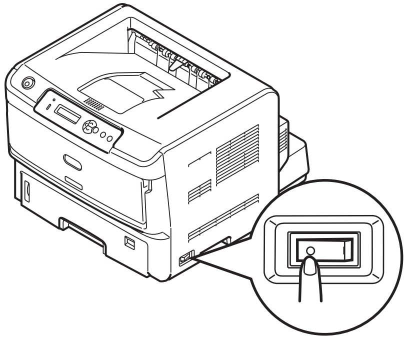
(2) Press the [MENU△] or [MENU▽] button to display [YES]

(3) Press the "ENTER" button.



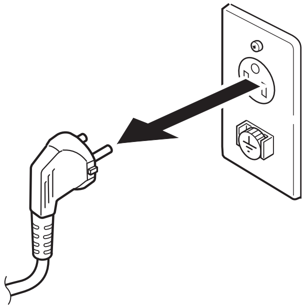
[SHUTDOWN] will be displayed and the shutdown process will start.

(4) When [PLEASE POW OFF / SHUTDOWN COMP] is displayed, press the power switch OFF (O).



No use for a long time

Unplug the power cord when the printer will not be used for a long time, such as during long vacations or trips.



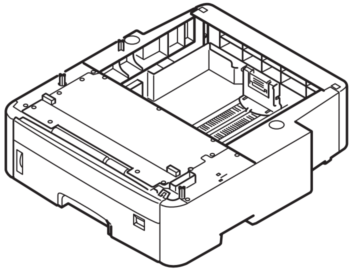
Note! This printer does not cause any malfunction even if the power plug is disconnected for a long time (four weeks or longer). However, it should be informed to users that consumables like EP toner cartridges deteriorate even not yet used and deterioration of consumables is not covered under warranty.

3.5.3 Installation and recognition confirmation of options

(1) Installation of an additional tray unit

An additional tray unit is intended for increasing the amount of paper that can be loaded in the printer. An optional tray holds 580 sheets of 64g/m2 (55 kg) paper allowing the printer to print up to 1,160 sheets continuously when used with a standard paper cassette together. B840dn can have two optional trays as second and third trays. B820n can have only one optional tray.

Memo • A second tray unit may be displayed as Tray 2.
- Two second trays installed on B840dn are called as a second tray or Tray 2 and a third tray or Tray 3 from the top to down starting with the standard paper cassette (Tray 1).



1. Turn off the printer and disconnect the power cord.

Turn off the printer by following the steps described under “Turning off the power” in section 3.5.2.

Note! • Turning off the power without taking proper shutdown steps may cause a failure of the printer, so be sure to run [SHUT DOWN].
- Installation of an additional tray unit with the power on may cause a failure of the printer.

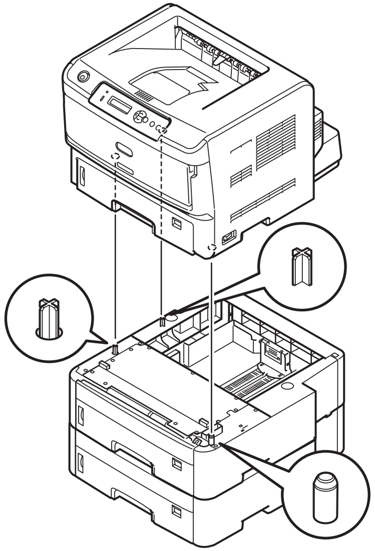
2. Place the printer on an additional tray unit.

Note! The printer weights approximately 28kg. It should be lifted by two or more people.

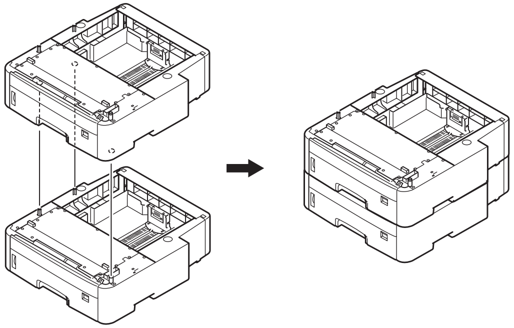
❶ Align the holes on the bottom of the printer to the pins of the additional tray unit.

❷ Place the printer gently on the additional tray unit.

To detach the additional tray unit, follow the same procedure in reverse order of installation.



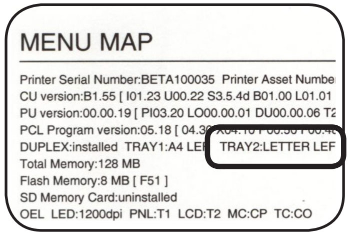
Note! To install two additional tray units to the printer, make them stacked before installation to the printer.



3. Connect the power cord and the printer cable to the printer and turn the power ON.

Note! If [SERVICE CALL 182: ERROR] appears, remove the installed tray unit and reinstall it to the printer.

4. Print the printer configuration and check the printout for successful installation of every added tray.



```
MENU MAP
Printer Serial Number:BETA100035  Printer Asset Numbe
CU version:B1.55 [ I01.23 U00.22 S3.5.4d B01.00 L01.01
PU version:00.00.19 [ PI03.20 LO00.00.01 DU00.00.06 T2
PCL Program version:05.18 [ 04.3
DUPLEX:installed  TRAY1:A4 LEF  TRAY2:LETTER LEF
Total Memory:128 MB
Flash Memory:8 MB [ F51 ]
SD Memory Card:uninstalled
OEL  LED:1200dpi  PNL:T1  LCD:T2  MC:CP  TC:CO
```

❶ Print the printer configuration by following the steps described in section 3.6.

❷ Check to make sure that every installed tray is shown in [Print Count] of [Printer Information].

Note! If every added tray is not shown there, remove every installed tray unit and reinstall them to the printer.

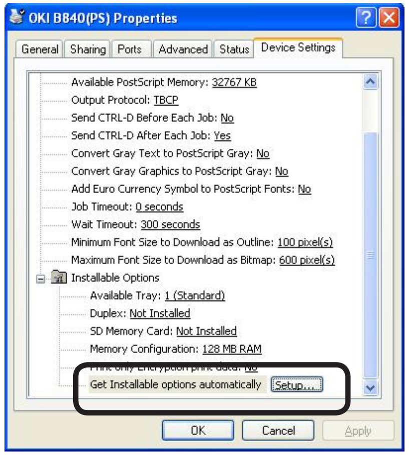
5. Set the number of trays in the printer driver.

Setting should be made in the printer driver to have the printer recognize every added tray.

If the printer driver hasn't been set up, set up the printer driver by referring to the relevant user's manual (Setup) and then perform the following setup.

Note! Administrator privileges on the computer are required.

Settings for Windows PS printer driver



Available PostScript Memory: 32767 KB
Output Protocol: TBCP
Send CTRL-D Before Each Job: No
Send CTRL-D After Each Job: Yes
Convert Gray Text to PostScript Gray: No
Convert Gray Graphics to PostScript Gray: No
Add Euro Currency Symbol to PostScript Fonts: No
Job Timeout: 0 seconds
Wait Timeout: 300 seconds
Minimum Font Size to Download as Outline: 100 pixel(s)
Maximum Font Size to Download as Bitmap: 600 pixel(s)
Installable Options
  Available Tray: 1 (Standard)
  Duplex: Not Installed
  SD Memory Card: Not Installed
  Memory Configuration: 128 MB RAM
  Print only Encryption print data: No
  Get Installable options automatically

(Screen of Windows XP)

❶ For Windows 7, select [Start]-[Devices and Printers].

For Windows Vista/Server 2008, select [Start] - [Control Panel] - [Printers].

For Windows XP, select [Start] - [Control Panel] - [Printers and Other Hardware] - [Printers and Faxes].

For Windows 2000, select [Start] - [Settings] - [Printers].

For Windows Server 2003, select [Start] - [Printers and Faxes].

❷ Right-click the [OKI B840(PS)] icon and select [Properties].

❸ Select [Get Installable options automatically] in [Installable Options] on the [Device Settings] tab and click [Setup] or [Get Installable options automatically]. For USB connection, manually set an appropriate value in [Available Tray].

❹ Click [OK].

3.6 Printing of the MENU MAP

Check that the printer operates correctly.

(1) Load A4 paper in Tray.

(2) Confirm that the panel displays "ONLINE".

(3) Press the [MENU△] button several times until "Information Menu" appears.

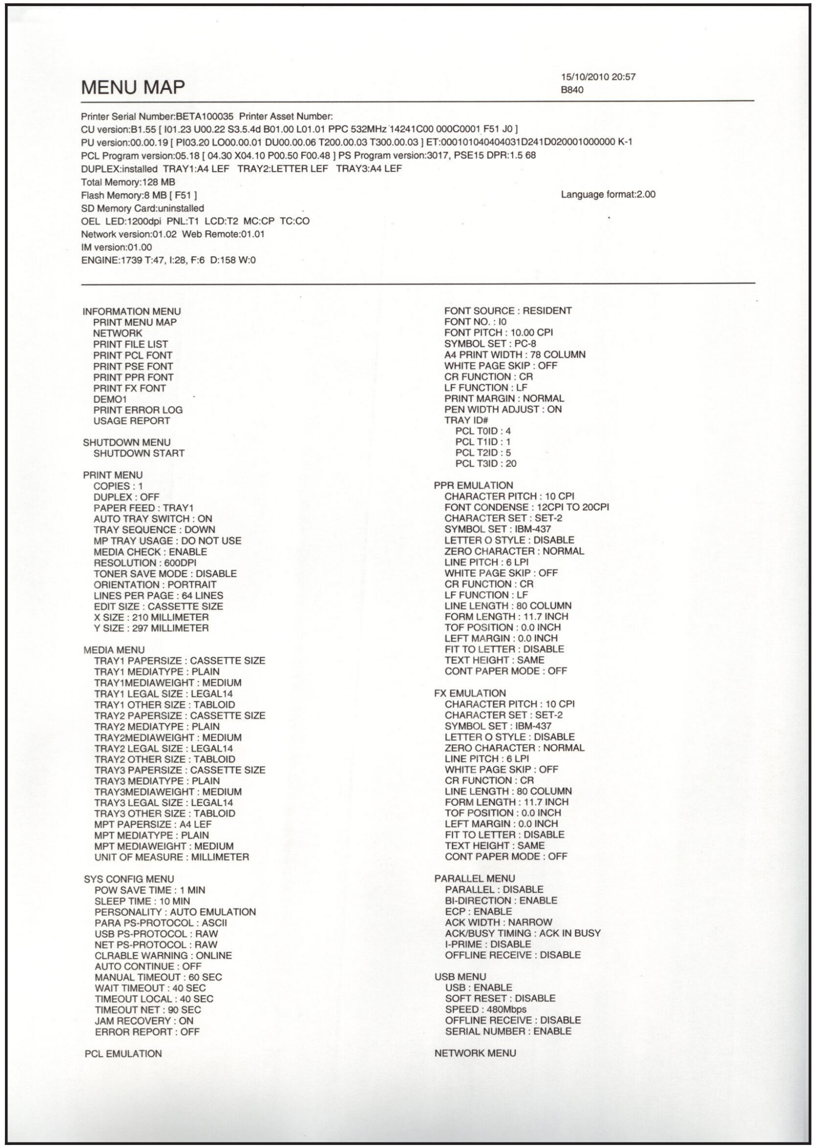
(4) Press the [ENTER] button until "Print Menu Map/Execute" appears.

(5) Press the [ENTER] button.

Printing of the MENU MAP is started.

Memo To print Network Information (two pages), press the [MENU△] button after the step (4) to view [Network] and then press the [ENTER] button.

Sample : B840



```
MENU MAP                                                      15/10/2010 20:57
                                                              B840

Printer Serial Number:BETA100035  Printer Asset Number:
CU version:B1.55 [ I01.23 U00.22 S3.5.4d B01.00 L01.01 PPC 532MHz 14241C00 000C0001 F51 J0 ]
PU version:00.00.19 [ PI03.20 LO00.00.01 DU00.00.06 T200.00.03 T300.00.03 ] ET:000101040404031D241D020001000000 K-1
PCL Program version:05.18 [ 04.30 X04.10 P00.50 F00.48 ] PS Program version:3017, PSE15 DPR:1.5 68
DUPLEX:installed  TRAY1:A4 LEF   TRAY2:LETTER LEF   TRAY3:A4 LEF
Total Memory:128 MB
Flash Memory:8 MB [ F51 ]                                     Language format:2.00
SD Memory Card:uninstalled
OEL  LED:1200dpi  PNL:T1  LCD:T2  MC:CP  TC:CO
Network version:01.02  Web Remote:01.01
IM version:01.00
ENGINE:1739 T:47, I:28, F:6  D:158 W:0

INFORMATION MENU
   PRINT MENU MAP
   NETWORK
   PRINT FILE LIST
   PRINT PCL FONT
   PRINT PSE FONT
   PRINT PPR FONT
   PRINT FX FONT
   DEMO1
   PRINT ERROR LOG
   USAGE REPORT

SHUTDOWN MENU
   SHUTDOWN START

PRINT MENU
   COPIES : 1
   DUPLEX : OFF
   PAPER FEED : TRAY1
   AUTO TRAY SWITCH : ON
   TRAY SEQUENCE : DOWN
   MP TRAY USAGE : DO NOT USE
   MEDIA CHECK : ENABLE
   RESOLUTION : 600DPI
   TONER SAVE MODE : DISABLE
   ORIENTATION : PORTRAIT
   LINES PER PAGE : 64 LINES
   EDIT SIZE : CASSETTE SIZE
   X SIZE : 210 MILLIMETER
   Y SIZE : 297 MILLIMETER

MEDIA MENU
   TRAY1 PAPERSIZE : CASSETTE SIZE
   TRAY1 MEDIATYPE : PLAIN
   TRAY1MEDIAWEIGHT : MEDIUM
   TRAY1 LEGAL SIZE : LEGAL14
   TRAY1 OTHER SIZE : TABLOID
   TRAY2 PAPERSIZE : CASSETTE SIZE
   TRAY2 MEDIATYPE : PLAIN
   TRAY2MEDIAWEIGHT : MEDIUM
   TRAY2 LEGAL SIZE : LEGAL14
   TRAY2 OTHER SIZE : TABLOID
   TRAY3 PAPERSIZE : CASSETTE SIZE
   TRAY3 MEDIATYPE : PLAIN
   TRAY3MEDIAWEIGHT : MEDIUM
   TRAY3 LEGAL SIZE : LEGAL14
   TRAY3 OTHER SIZE : TABLOID
   MPT PAPERSIZE : A4 LEF
   MPT MEDIATYPE : PLAIN
   MPT MEDIAWEIGHT : MEDIUM
   UNIT OF MEASURE : MILLIMETER

SYS CONFIG MENU
   POW SAVE TIME : 1 MIN
   SLEEP TIME : 10 MIN
   PERSONALITY : AUTO EMULATION
   PARA PS-PROTOCOL : ASCII
   USB PS-PROTOCOL : RAW
   NET PS-PROTOCOL : RAW
   CLRABLE WARNING : ONLINE
   AUTO CONTINUE : OFF
   MANUAL TIMEOUT : 60 SEC
   WAIT TIMEOUT : 40 SEC
   TIMEOUT LOCAL : 40 SEC
   TIMEOUT NET : 90 SEC
   JAM RECOVERY : ON
   ERROR REPORT : OFF

PCL EMULATION
   FONT SOURCE : RESIDENT
   FONT NO. : I0
   FONT PITCH : 10.00 CPI
   SYMBOL SET : PC-8
   A4 PRINT WIDTH : 78 COLUMN
   WHITE PAGE SKIP : OFF
   CR FUNCTION : CR
   LF FUNCTION : LF
   PRINT MARGIN : NORMAL
   PEN WIDTH ADJUST : ON
   TRAY ID#
      PCL T0ID : 4
      PCL T1ID : 1
      PCL T2ID : 5
      PCL T3ID : 20

PPR EMULATION
   CHARACTER PITCH : 10 CPI
   FONT CONDENSE : 12CPI TO 20CPI
   CHARACTER SET : SET-2
   SYMBOL SET : IBM-437
   LETTER O STYLE : DISABLE
   ZERO CHARACTER : NORMAL
   LINE PITCH : 6 LPI
   WHITE PAGE SKIP : OFF
   CR FUNCTION : CR
   LF FUNCTION : LF
   LINE LENGTH : 80 COLUMN
   FORM LENGTH : 11.7 INCH
   TOF POSITION : 0.0 INCH
   LEFT MARGIN : 0.0 INCH
   FIT TO LETTER : DISABLE
   TEXT HEIGHT : SAME
   CONT PAPER MODE : OFF

FX EMULATION
   CHARACTER PITCH : 10 CPI
   CHARACTER SET : SET-2
   SYMBOL SET : IBM-437
   LETTER O STYLE : DISABLE
   ZERO CHARACTER : NORMAL
   LINE PITCH : 6 LPI
   WHITE PAGE SKIP : OFF
   CR FUNCTION : CR
   LINE LENGTH : 80 COLUMN
   FORM LENGTH : 11.7 INCH
   TOF POSITION : 0.0 INCH
   LEFT MARGIN : 0.0 INCH
   FIT TO LETTER : DISABLE
   TEXT HEIGHT : SAME
   CONT PAPER MODE : OFF

PARALLEL MENU
   PARALLEL : DISABLE
   BI-DIRECTION : ENABLE
   ECP : ENABLE
   ACK WIDTH : NARROW
   ACK/BUSY TIMING : ACK IN BUSY
   I-PRIME : DISABLE
   OFFLINE RECEIVE : DISABLE

USB MENU
   USB : ENABLE
   SOFT RESET : DISABLE
   SPEED : 480Mbps
   OFFLINE RECEIVE : DISABLE
   SERIAL NUMBER : ENABLE

NETWORK MENU
```

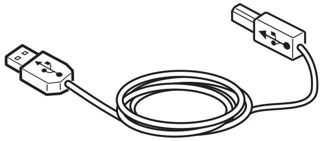
3.7 Connection methods

<USB connection>

Note! Refer to the user's manual for operating environment.

Preparing a USB cable

Note!
- No printer cable is supplied with the printer. Ask the user to prepare a printer cable.
- Ask the user to prepare a USB 2.0 cable.
- When connection is to be made in "High-Speed" mode with a USB 2.0, use a Hi-Speed-ready USB 2.0 cable.
- A USB 2.0 cable to be used must be no more than five meters long. A USB cable of two meters or less is recommended.



Switching off the printer and the computer

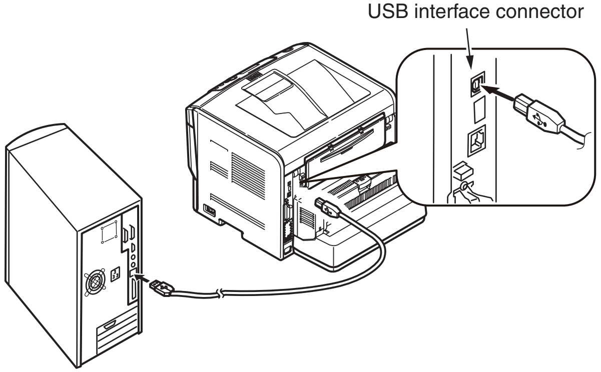
Memo Although a USB cable can be plugged in or unplugged with the computer and the printer switched on, for secure installation of the USB driver and the printer driver to be performed subsequently, the printer should be turned off.

Connecting the computer to the printer

(1) Plug the USB cable into the USB interface connector of the printer.

(2) Plug the USB cable into the USB interface connector of the computer.

Note! Be careful not to plug the USB cable into the network interface connector. Such wrong connection could cause malfunction.



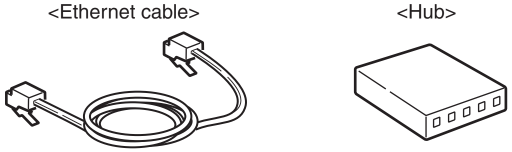
Memo For the setup procedure of the printer driver, see the user's manual.

<Ethernet cable connection>

Note! Refer to the user's manual for operating environment.

Preparing an Ethernet cable

Note! An Ethernet cable and a hub do not come with the printer. Ask the user to prepare an Ethernet cable (a Category 5 twisted pair cable, straight through) and a hub.

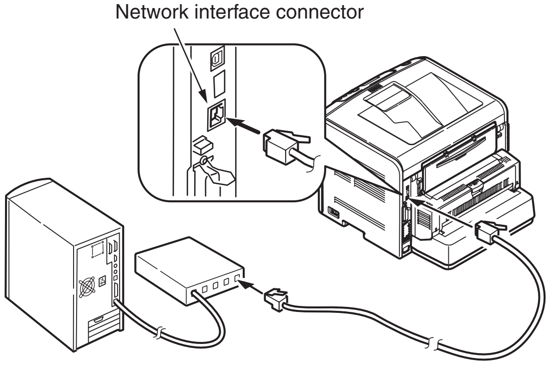


Switching off the printer and the computer

Connecting the computer to the printer

(1) Plug the Ethernet cable into the network interface connector of the printer.

(2) Plug the Ethernet cable into the hub.



Memo For the setup procedure of the printer driver, see the user's manual.

3.8 Checking of paper used by the user

Load the media used by the user in the printer, make media weight/media type settings, execute menu map /demo printing, and check the printout to make sure that no toner flakes off.

Type	Weight or thickness	Setting*[1] for paper thickness [Media weight]	
		Printer driver	Operator panel
Plain paper*[3]	52-55 kg (60-64g/m^2)	Light*[2]	LIGHT*[2]
	55-63 kg (64-74g/m^2)	Medium Light	M LIGHT
	64-74 kg (75-87g/m^2)	Medium	MEDIUM
	75-90 kg (88-105g/m^2)	Medium Heavy	M HEAVY
	91-103 kg (106-120g/m^2)	Heavy	HEAVY
	104-151 kg (121-176g/m^2)	Ultra heavy 1	ULTRA HEAVY 1
	152-172 kg (177-200g/m^2)	Ultra heavy 2	ULTRA HEAVY 2
Postcard	—	—	—
Envelope	—	—	—
Label	0.1 to under 0.17 mm	Labels 1	Heavy
	0.17 to 0.2 mm	Labels 2	Ultra heavy 1

*1: Media weight and type can be set on the operator panel and in the printer driver. The settings in the printer driver take priority. Data is printed out in accordance with the setting on the operator panel when [Auto selection] is selected in [Feed tray] or [Printer setting] is selected in [Media weight].

*2: Set it in "LIGHT" when wrinkle occurs with "M LIGHT".

*3: The weight of the paper supported for duplex print is 52-90 kg (60-105g/m2).

Memo

Print speed decelerates when [Ultra Heavy 1] or [Ultra heavy 2] of media weight is set.

4. REPLACEMENT OF PARTS

This chapter describes the procedures of the field replacement of parts, assemblies and units. The procedures are to detach them. Reverse the procedures to attach them.

The reference part numbers used in this manual (such as ① and ②) do not identical to the part numbers in the maintenance disassembly configuration diagram 44675901TL and the RSPL 44675901TR.

4.1 Notes on replacement of parts 44
4.2 Part replacement procedure..46
4.3 Portions Lubricated 75

4.1 Notes on replacement of parts

(1) Prior to replacing a part, unplug the AC cord and the interface cable.

   (a) Be sure to use the following procedure to unplug the AC cord:

      ① Turn off the printer (the power switch to the off (O) position).

      ② Pull out the AC plug of the AC cord from the AC power source.

      ③ Unplug the AC cord and the interface cable.

⚠Warning	Electric shock hazard.	⚠

When replacing the low-voltage power supply, due to potential electric shock, wear insulated gloves or be careful not to touch the conductors or terminals of the power supply directly.

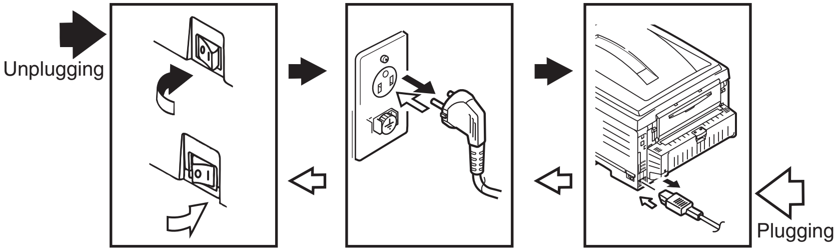
After the AC cord is unplugged, the capacitor may take about one minute to discharge completely, or could not discharge due to PCB breakdown. Use caution about electric shock.

   (b) Be sure to use the following procedure to reconnect the printer:

      ① Connect the AC cord and the interface cable to the printer.

      ② Insert the AC plug into the AC power source.

      ③ Turn on the printer (the power switch to the on (I) position).



(2) Do not disassemble the printer so long as it operates properly.

(3) Minimize disassembly. Do not detach the parts not shown in the part replacement procedure.

(4) Use the replacement tools specified.

(5) Conduct disassembly in the order instructed, or part damage may occur.

(6) Removed small parts, such as screws or collars, should be tentatively installed in their original positions.

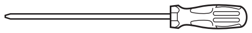
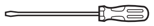
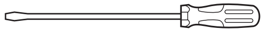
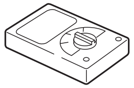
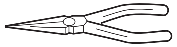
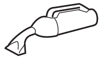
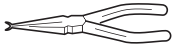
(7) Do not use static-prone gloves when handling integrated circuits (ICs) or circuit boards, including microprocessors, and ROM and RAM chips.

(8) Do not place printed-circuit boards (PCBs) directly on the printer or a floor.

Maintenance Tools:

Table 4-1-1 shows the tools necessary to replace printed-circuit boards and units:

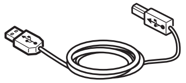
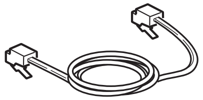
Table 4-1-1: Maintenance Tools

No.	Maintenance Tool		Quantity	Use	Remarks
1		No. 2-200 screwdriver with magnetic tip	1	3- to 5-mm screws	
2		Screwdriver No. 3-100	1		
3		Screwdriver No. 5-200	1		
4		Digital multimeter	1		
5		Pliers	1		
6		Handy vacuum cleaner (toner vacuum)	1		See note.
7		E-ring pliers	1	E-shaped ring removal	

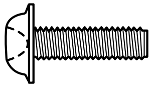
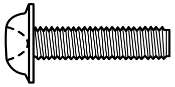
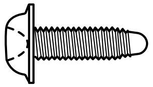
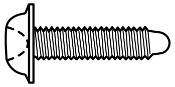
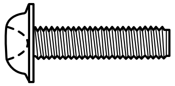
Note! Use a toner vacuum. Using a general-purpose vacuum may cause toner to catch fire.

Table 4-1-2 shows the tools necessary to use Maintenance Utility software.

Table 4-1-2: Maintenance Tools

No.	Maintenance Tool		Quantity	Use	Remarks
1		Notebook personal computer (with Maintenance Utility software installed)	1		See section 5.2 for Maintenance Utility.
2		USB cable	1		
3		Ethernet cable (crossover cable)	1		

The typical screw currently used:

Form figure	Name
	Screw(silver-colored)(6mm)
	Screw(silver-colored)(8mm)
	Tip round screw(black-colored)(6mm)
	Tip round screw(black-colored)(8mm)
	Screw(black-colored)(8mm)

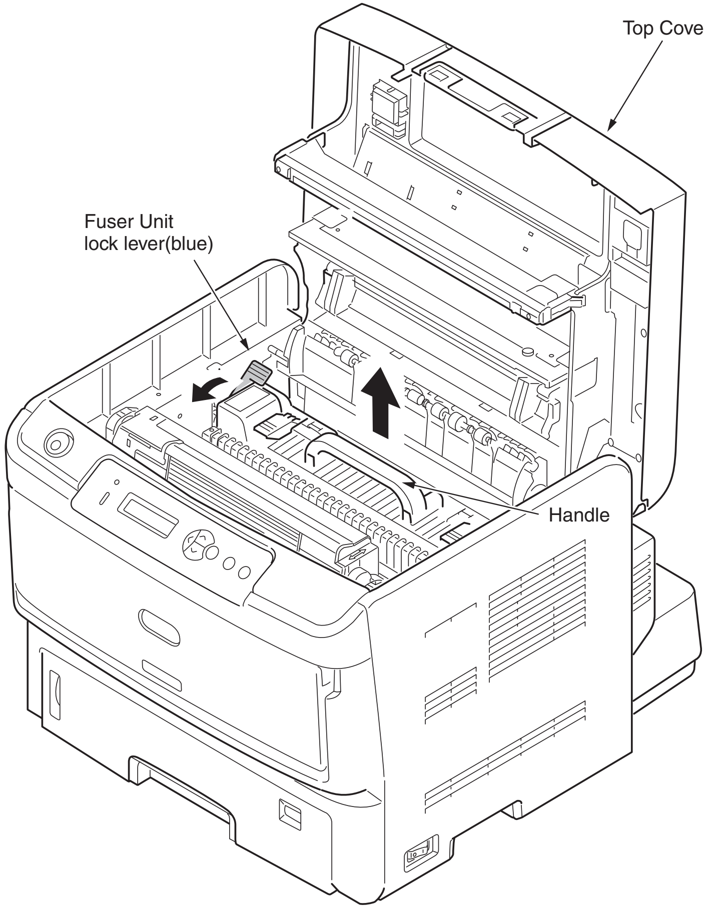
4.2 Part replacement procedure

This section describes the procedure for replacing the parts and assemblies shown in the disassembly diagram.

4.2.1 Fuser unit

(1) Open the Top Cover.

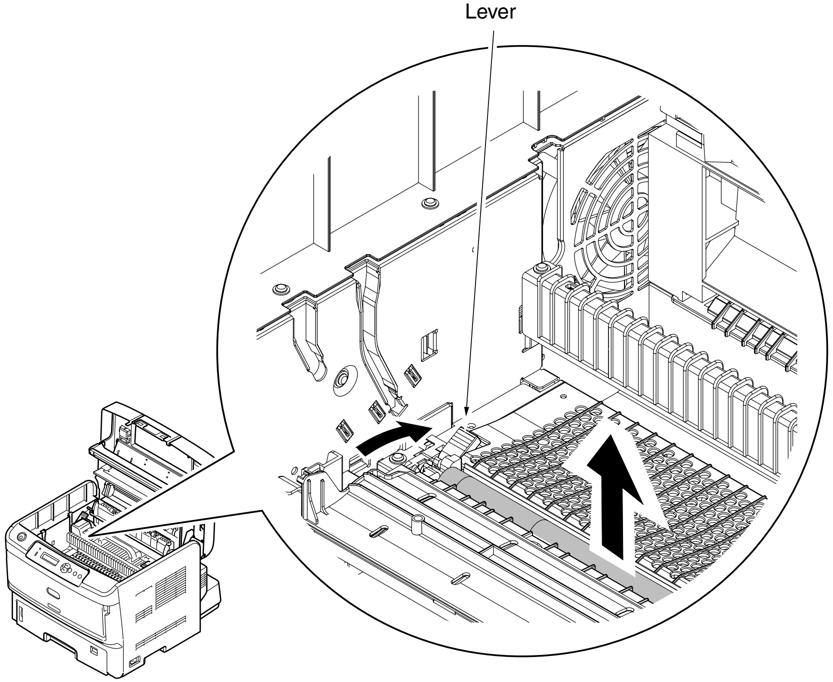
(2) Pull the fuser unit lock lever (blue) in the direction of the arrow, grab the handle and detach the fuser unit.


Top Cover
Fuser Unit
lock lever(blue)
Handle

4.2.2 Transfer roller

(1) Open the Top Cover.

(2) Push the blue lever to release the transfer roller.



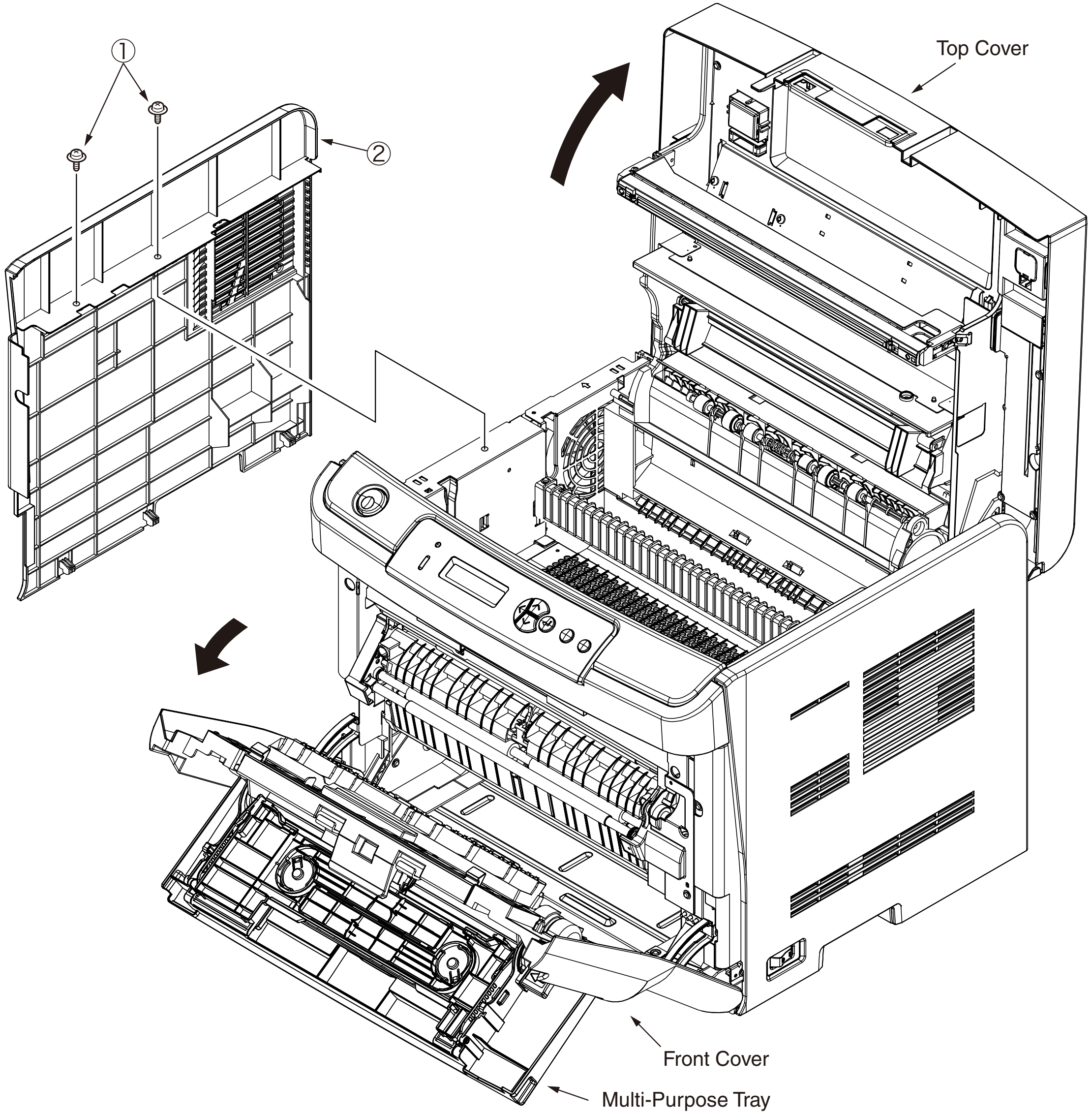
4.2.3 Left Side Cover

(1) Open the Top Cover.

(2) Open the Multi-Purpose Tray.

(3) Open the Front Cover.

(4) Remove the two screws (silver-colored)(8mm) ① to detach the Left Side Cover ② (tool number 1).


①
②
Top Cover
Front Cover
Multi-Purpose Tray

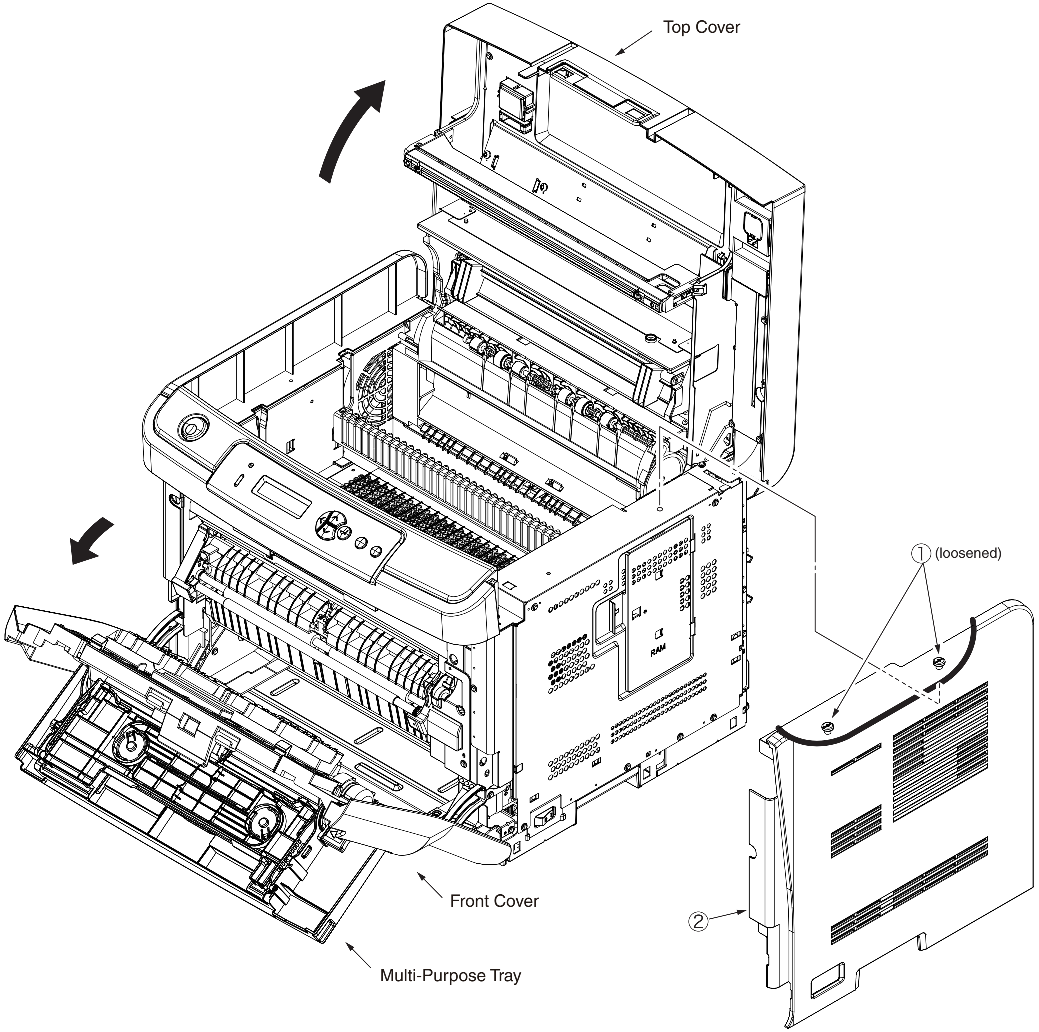
4.2.4 Right Side Cover

(1) Open the Top Cover.

(2) Open the Multi-Purpose Tray.

(3) Open the Front Cover.

(4) Loosen the two screws ① and detach the Right Side Cover ② (tool number 1).


Top Cover
① (loosened)
Front Cover
②
Multi-Purpose Tray
RAM

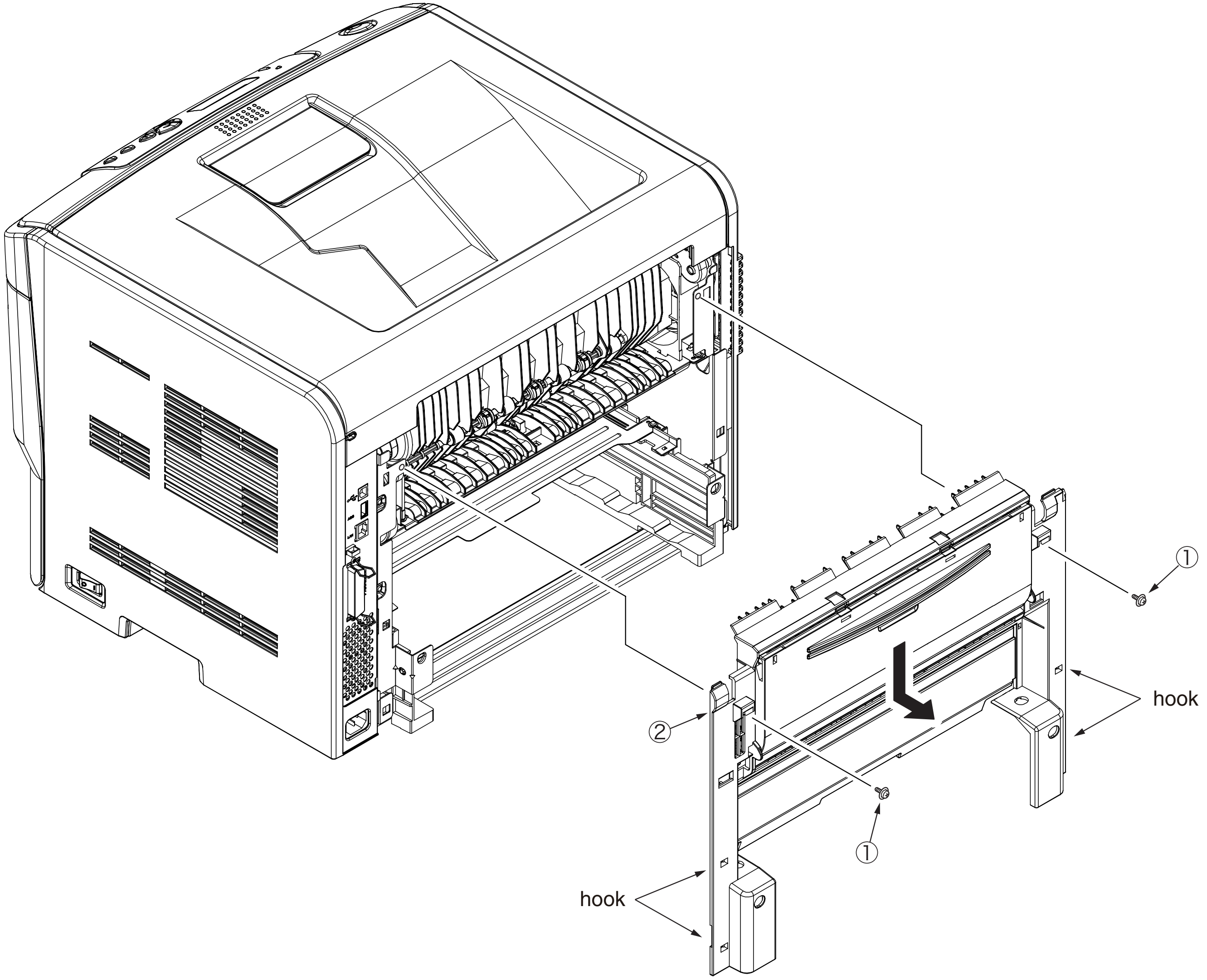
4.2.5 Rear Cover Assy.

(1) Pull out the paper cassette. Remove the cassette cover.

(2) Pull out the duplex unit .

(3) Remove the two screws (silver-colored)(6mm) ① (tool number 1).

(4) Sliding the Rear Cover Assy ② in the direction of the arrow, remove the four hook, detach it.



4.2.6 LED Assy.

(1) Open the Top Cover.

(2) Remove the FFC cables. As shown in diagram (1), applying force in the direction of the arrow, unlatch the portion A, and then the portion B, to detach the LED Assy. ①.

(Note on removing / installing)

Do not insert or remove the FFC cable at an angle.

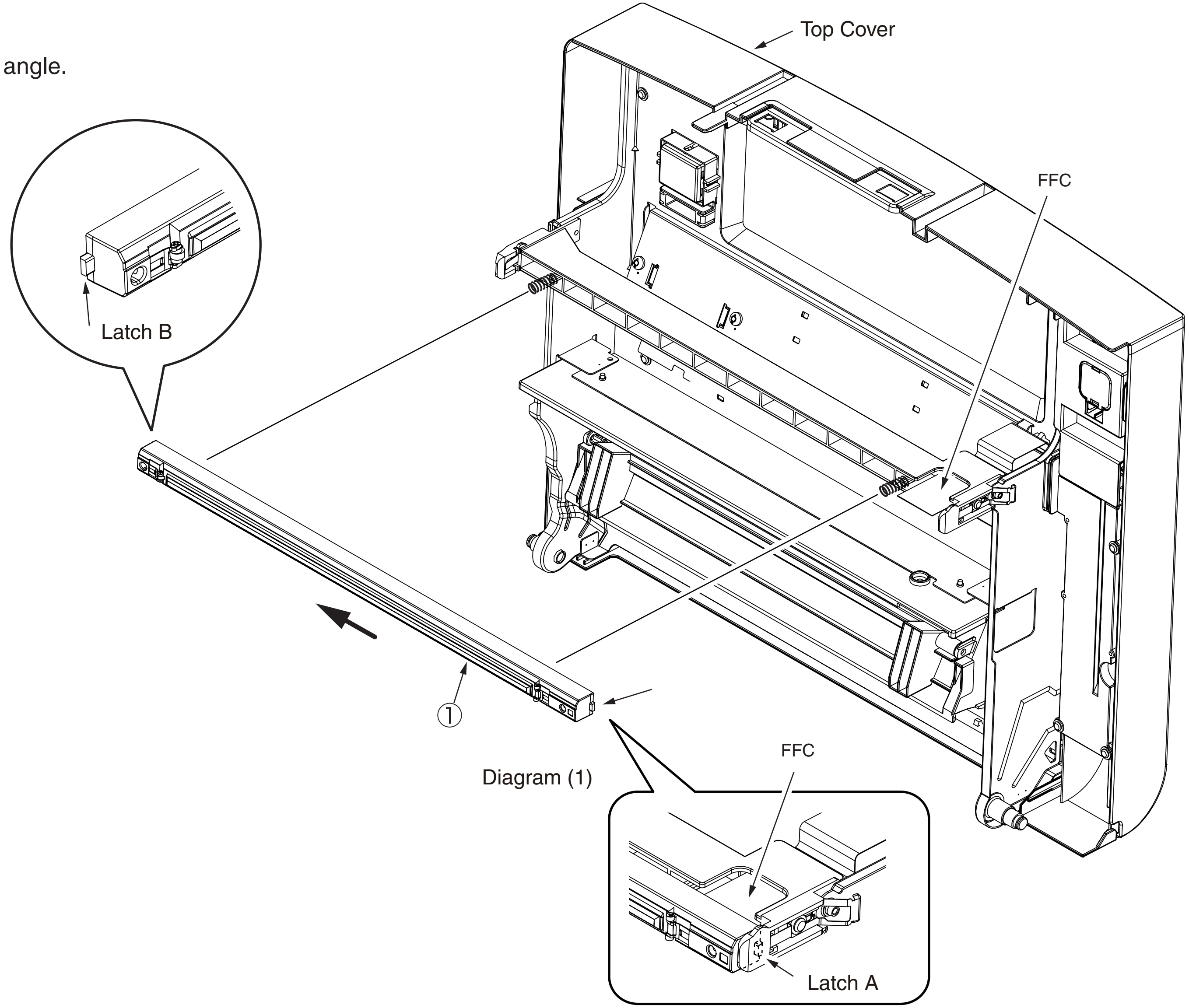


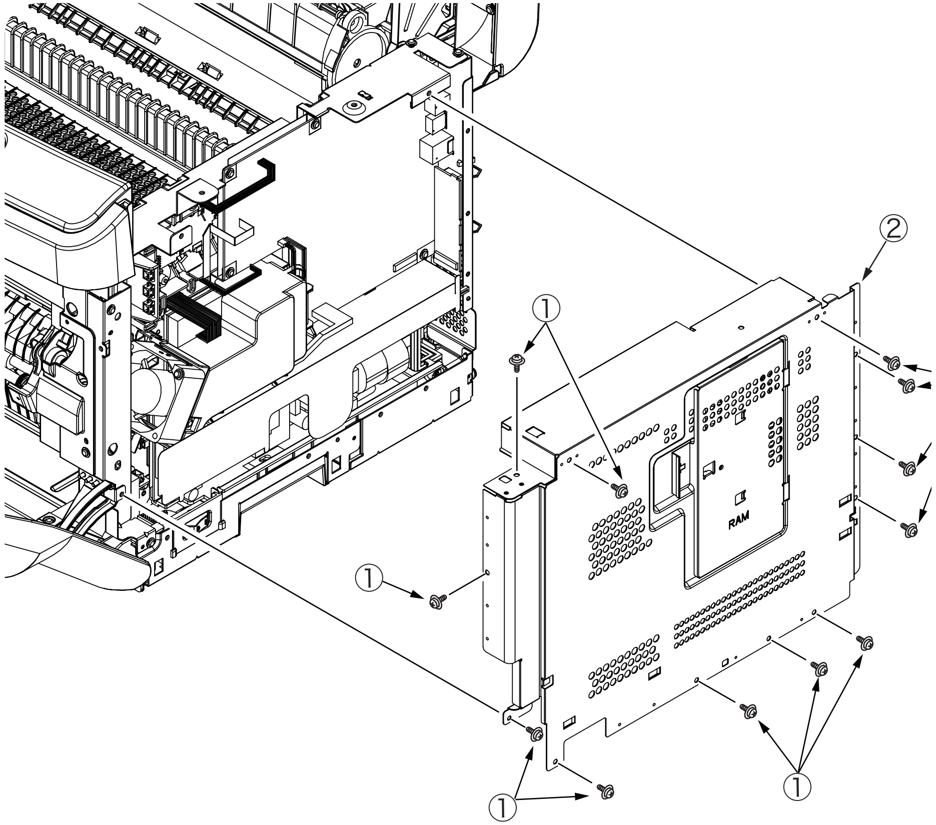
Diagram (1)

4.2.7 CU/PU Board

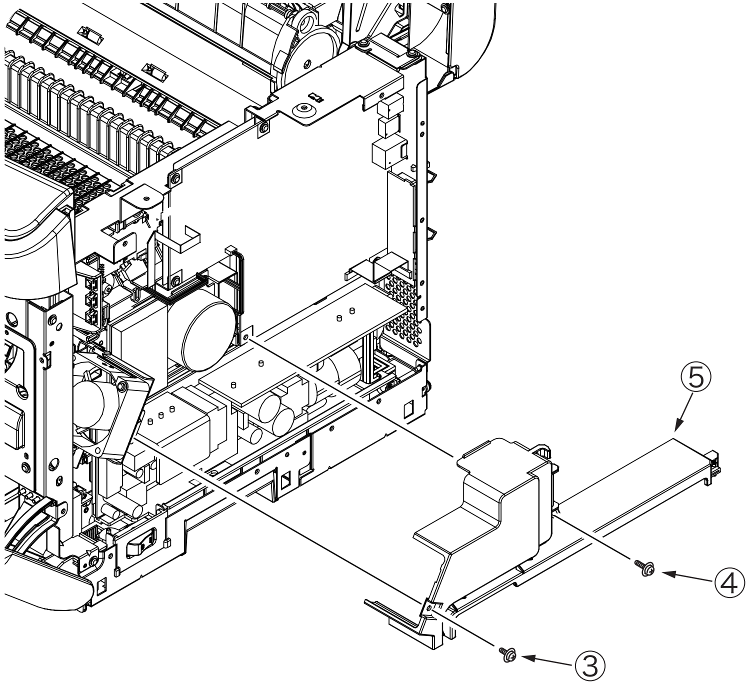
(1) Open the Top Cover.

(2) Remove the Right Side Cover (see section 4.2.4).

(3) Remove the twelve screws (silver-colored) (6mm)① and the Plate Shield Assy. ② (tool number 1).



(4) Remove the cables, remove the screw (silver-colored)(6mm) ③, remove the screw (silver-colored)(8mm) ④, remove the Cover-Duct-PWR ⑤. (tool number 1)



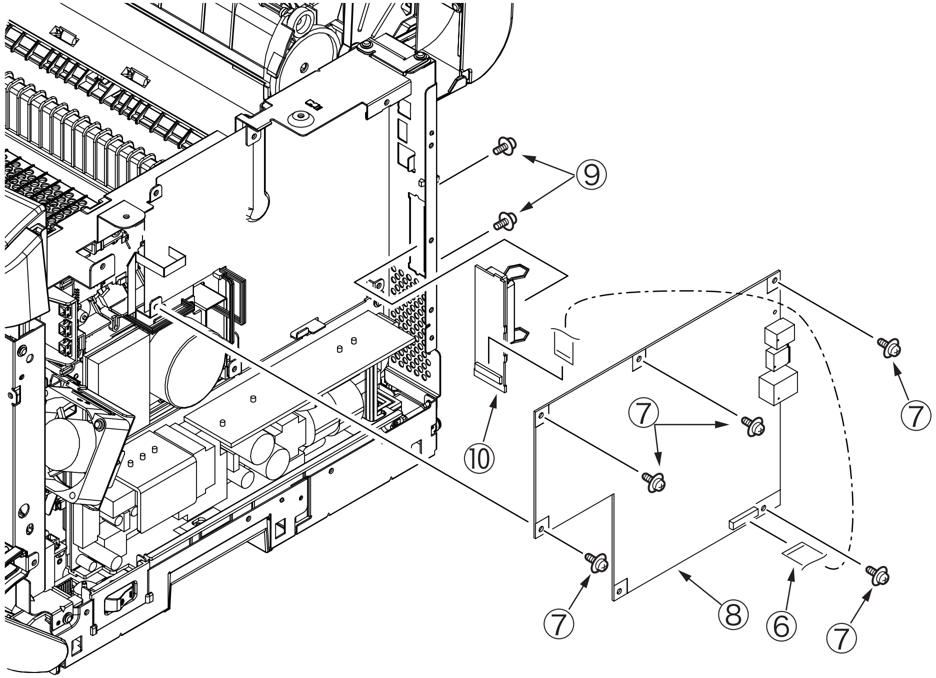
(5) Remove the FFC cable ⑥, remove the all cables.

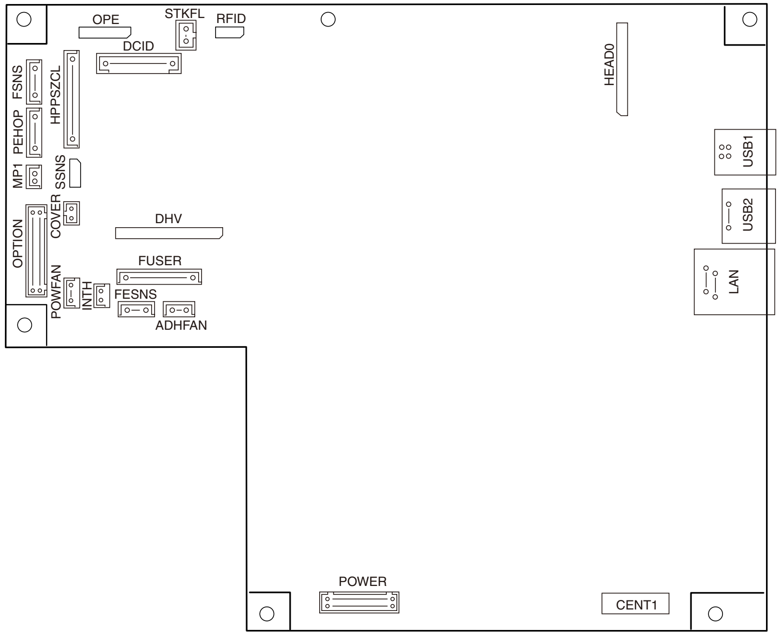
(6) Remove the five screws (silver-colored)(6mm) ⑦ , remove the CU/PU Board ⑧.
(tool number 1).

(7) Remove the two screws (silver-colored) (4mm)⑨, remove the Centronics-board ⑩.
(tool number 1).

(Note on removing / installing)

Do not insert or remove the FFC cable at an angle.




OPE
STKFL
RFID
DCID
FSNS
PEHOP
HPPSZCL
MP1
SSNS
OPTION
COVER
DHV
FUSER
POWFAN
INTH
FESNS
ADHFAN
HEAD0
USB1
USB2
LAN
POWER
CENT1

4.2.8 Low-voltage power supply

⚠Warning	Electric shock hazard.	⚠

When replacing the low-voltage power supply, due to potential electric shock, wear insulated gloves or be careful not to touch the conductors or terminals of the power supply directly.

After the AC cord is unplugged, the capacitor may take about one minute to discharge completely, or could not discharge due to PCB breakdown. Use caution about electric shock.

(1) Remove the Plate Shield Assy. (see section 4.2.7)

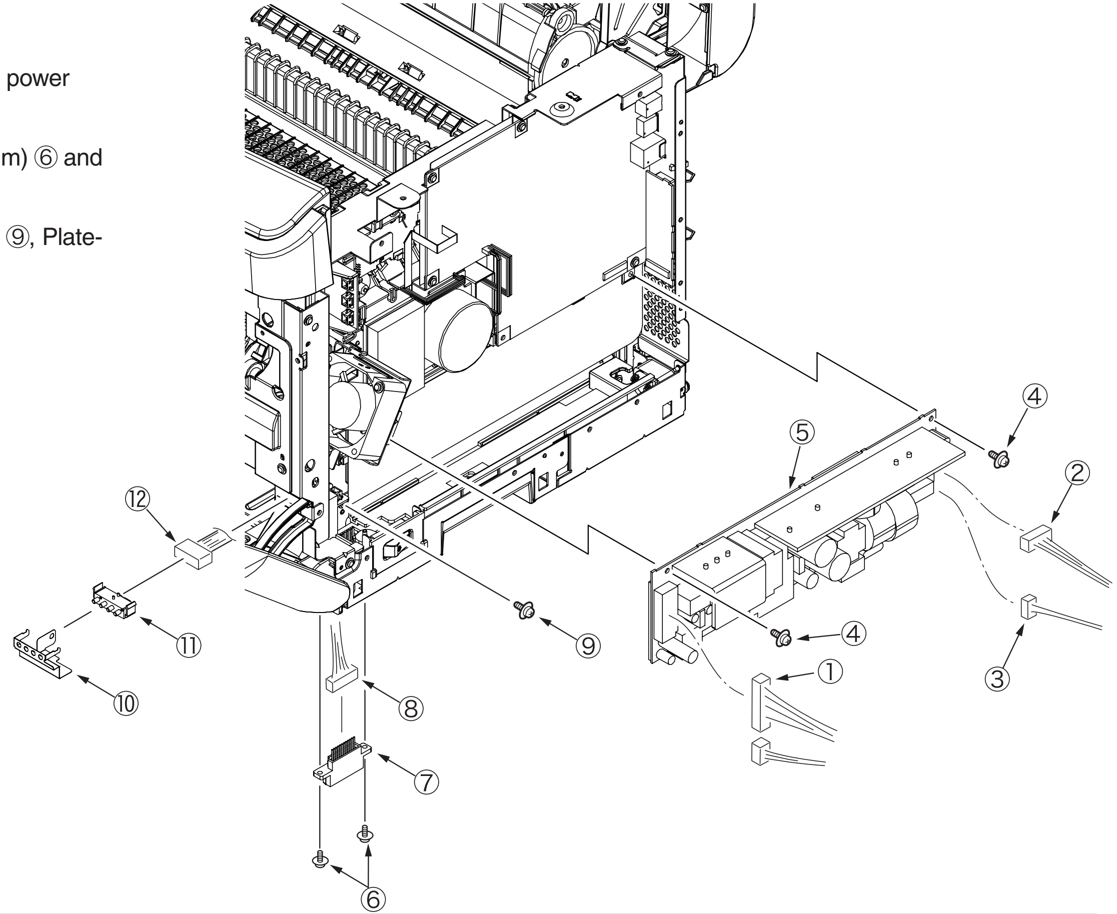
(2) Remove the Cover-Duct-PWR. (see section 4.2.7)

(3) Remove the connector ① and connector ②, remove the connector ③.

(4) Remove the two screws (silver-colored)(6mm) ④, remove the low-voltage power supply ⑤ . (tool number 1)

(5) To remove the Connector-Plug ⑦, remove two screws (black-colored)(8mm) ⑥ and disconnect the connector ⑧.

(6) To remove the Push-Switch ⑪, remove two screws (silver-colored)(6mm) ⑨, Plate-FG ⑩and disconnect the connector ⑫.



4.2.9 Board IZT

(1) Remove the CU/PU board. (see section 4.2.7)

(2) Remove the low-voltage power supply. (see section 4.2.8)

(3) Remove the sheet-insulation ①.

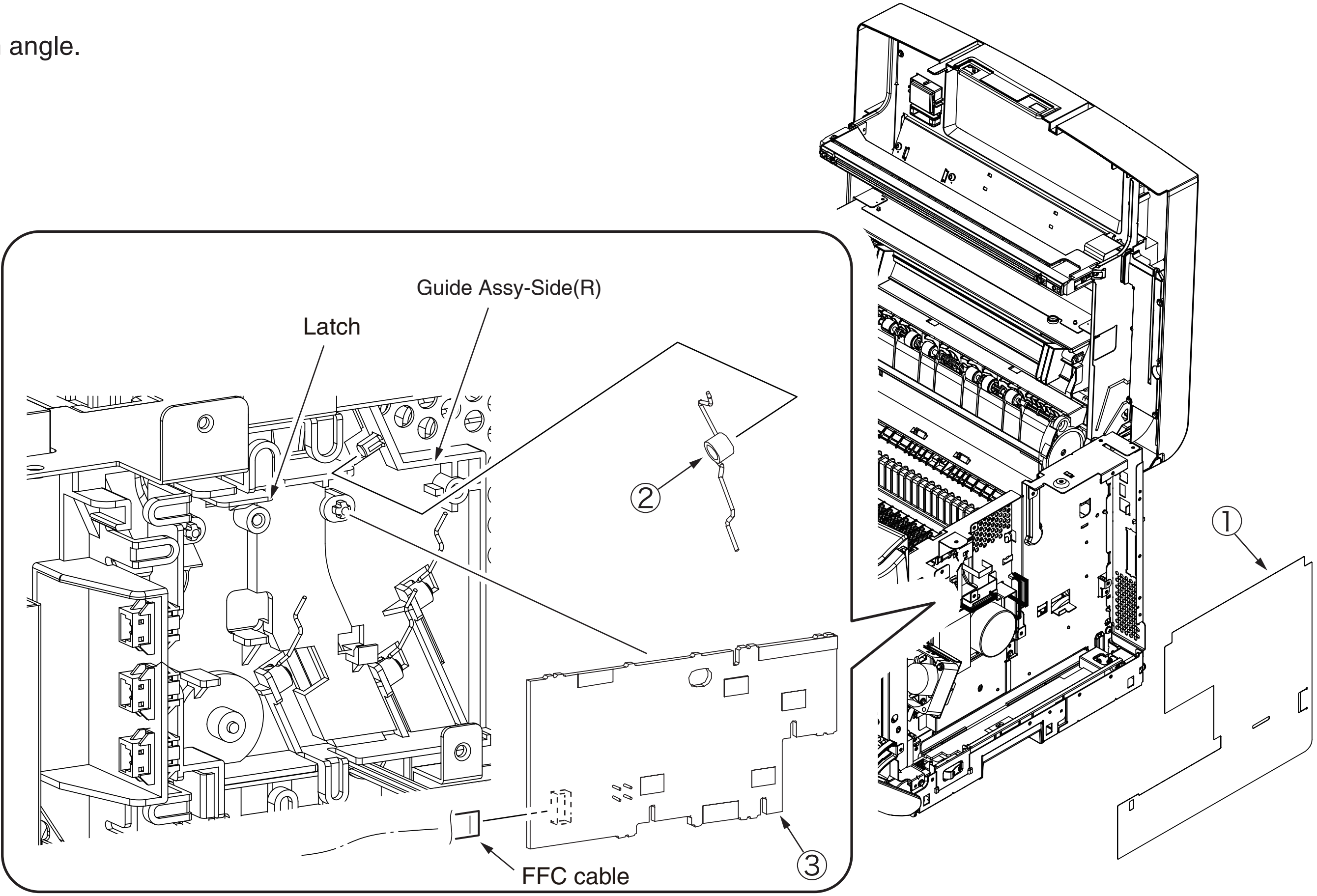
(4) Remove the one spring-contact_TL-B ②.

(5) Bend the tab of the Guide Assy-Side (R) and pull out the Board IZT ③ obliquely upward.

(6) Disconnect the FFC cable.

(Note on removing / installing)

Do not insert or remove the FFC cable at an angle.



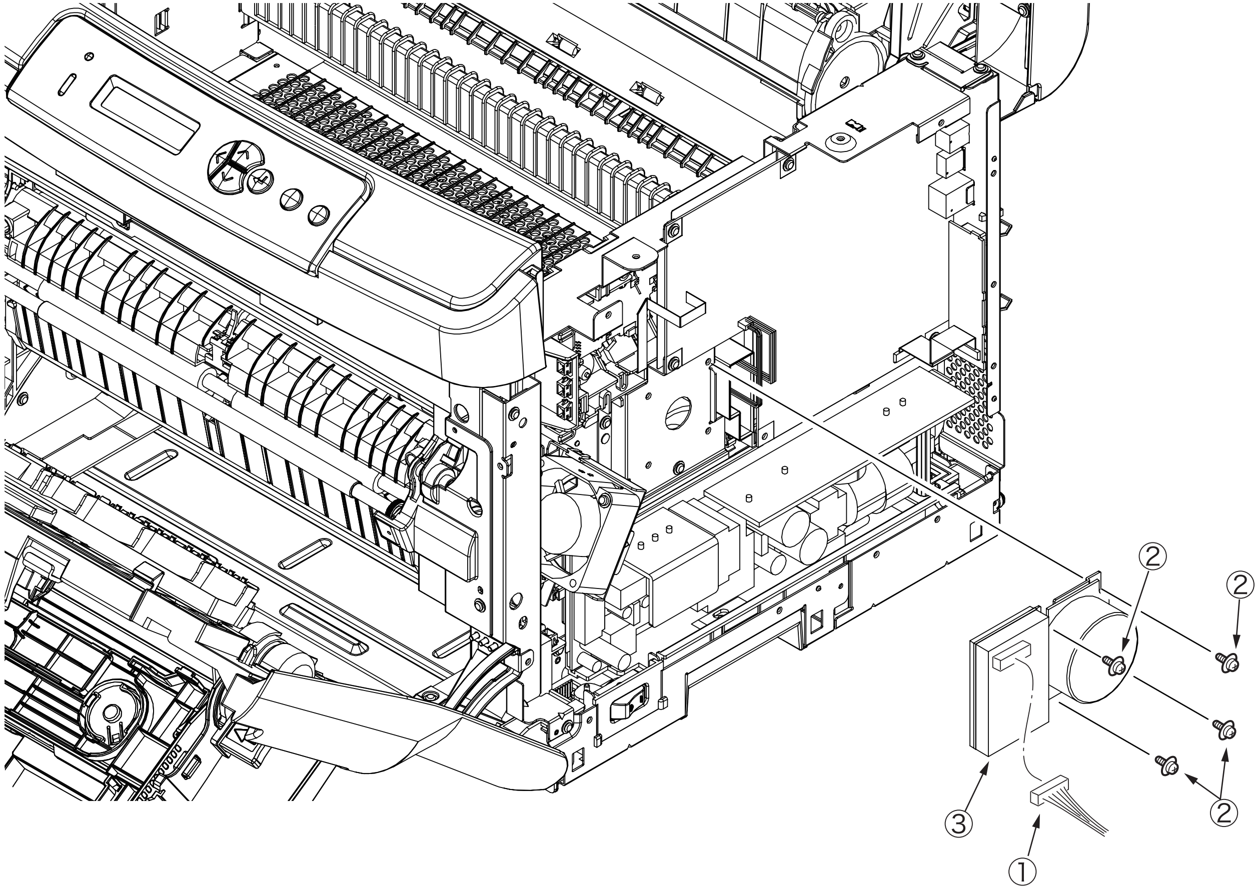
4.2.10 Main Motor

(1) Remove the Plate Shield Assy. (see section 4.2.7)

(2) Remove the Cover-Duct-PWR. (see section 4.2.7)

(3) Remove the cord ①.

(4) Remove the four screws (silver-colored)(6mm) ②, remove the Main motor ③.
(tool number 1).



4.2.11 Low-voltage power supply fan

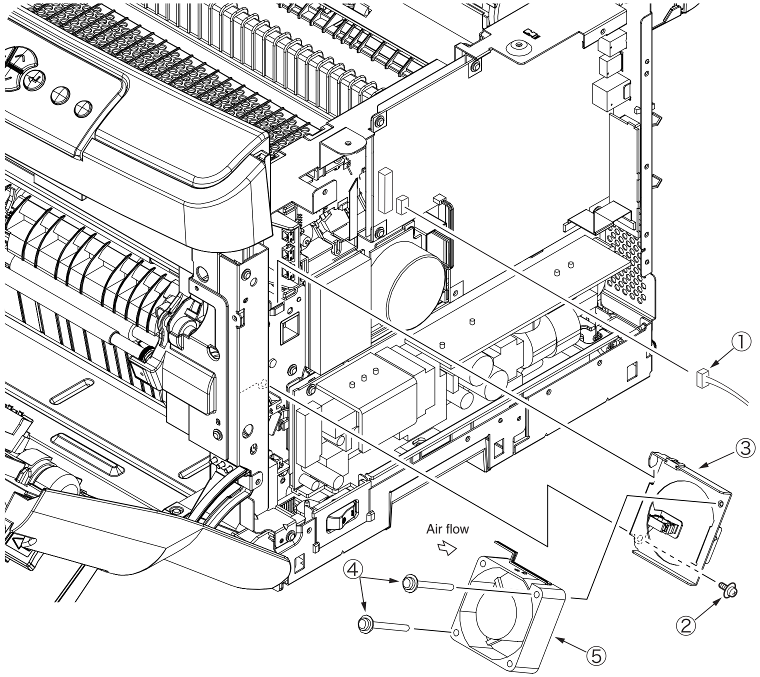
(1) Remove the Plate Shield Assy. (see section 4.2.7)

(2) Remove the Cover-Duct-PWR. (see section 4.2.7)

(3) Remove the cord ①.

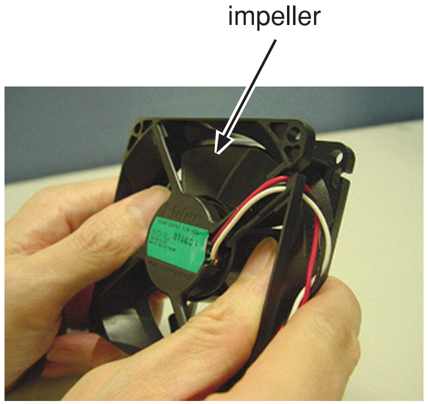
(4) Remove the screw (silver-colored) (6mm)②, remove the Bracket-Fan ③. (tool number 1)

(5) Remove the two screws (silver-colored)(30mm) ④, remove the low-voltage power supply Fan ⑤.



(Note on removing / installing)

1. Turn the low-voltage power supply FAN ⑤ with an arrow marked on it pointed to the arrow in the left illustration to install. (Install the low-voltage power supply FAN ⑤ with its label inward.)
2. While removing or installing FAN , do not press impeller of the FAN as shown by the following photo. In case of the impeller unfastened by mistake, do not reuse it and install a new FAN.



4.2.12 HV-Board / Fuser-FAN

(1) Open the Top Cover.

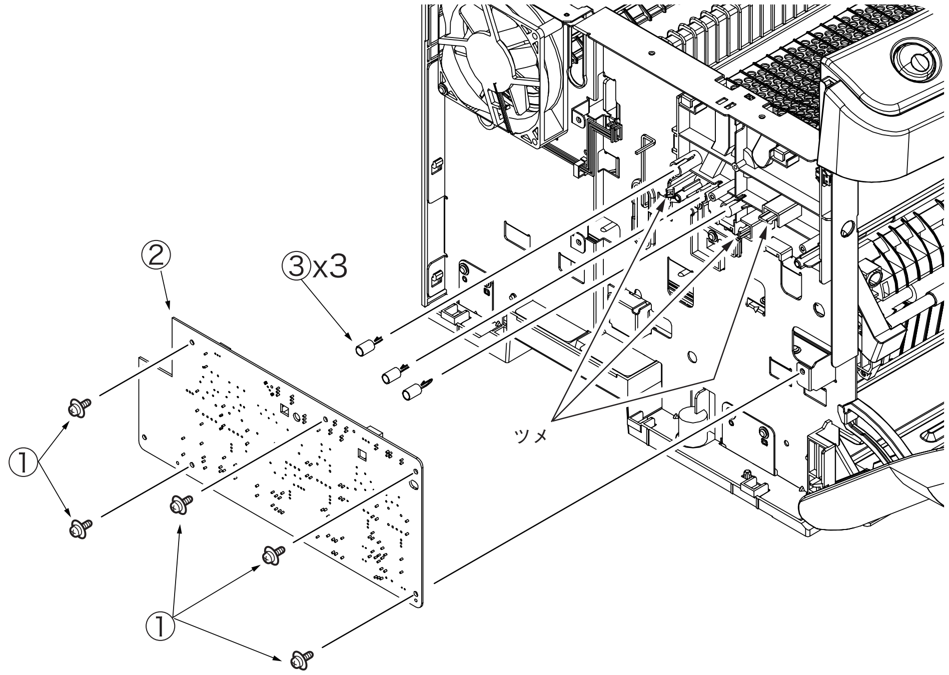
(2) Remove the Left Side Cover (see section 4.2.3).

(3) Remove the five screws (silver-colored)(6mm) ①. (tool number 1)

(4) Disengage the three tabs, remove the HV-board ②.

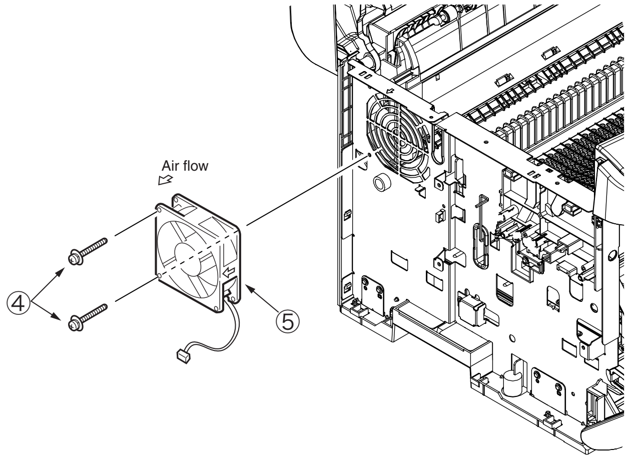
(5) Remove the all cables from the HV-board ②.

(6) Remove the Spring-Contact-ID ③.



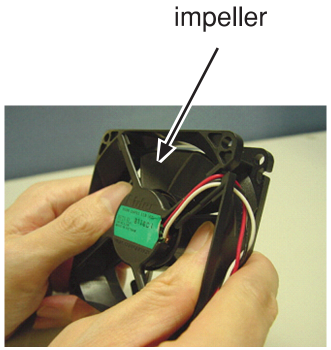
(7) Remove the two screws (silver-colored)(30mm) ④. (tool number 1)

(8) Remove the Fuser-FAN. ⑤.



(Note on removing / installing)

1. Turn the Fuser FAN ⑤ with an arrow marked on it pointed to the arrow in the upper illustration to install. (Install the Fuser FAN ⑤ with its label outward.)
2. While removing or installing FAN , do not press impeller of the FAN as shown by the following photo. In case of the impeller unfastened by mistake, do not reuse it and install a new FAN.
3. Do not insert or remove the FFC cable at an angle.



4.2.13 Control Panel Assy

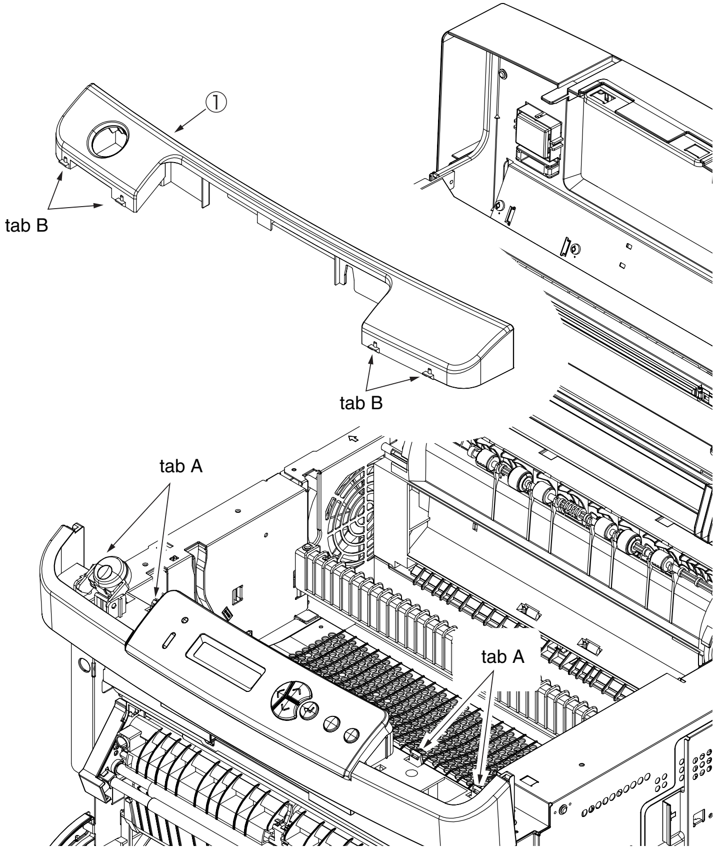
(1) Open the Top Cover.

(2) Open the Multi-Purpose Tray.

(3) Open the Front Cover.

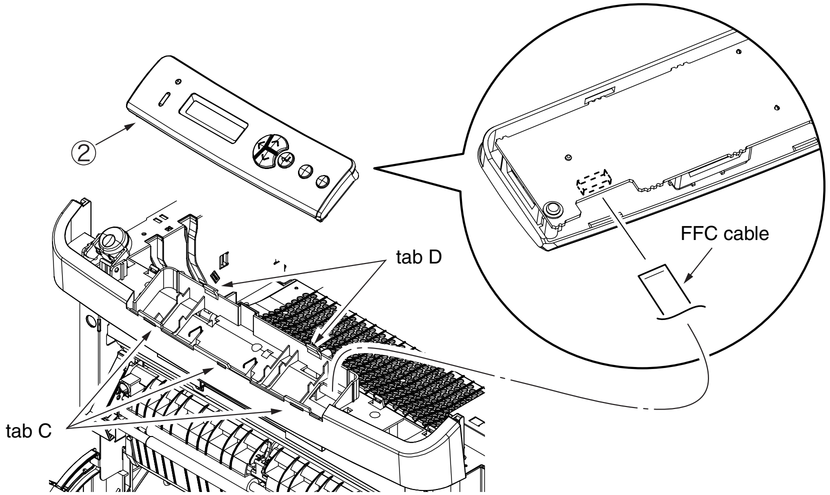
(4) Remove the Left Side Cover / Right Side Cover. (see section 4.2.3 / 4)

(5) Disengage the four tabs (A), disengage the four tabs (B), remove the OP sub-frame ①.



(6) Disengage the three tabs (C), disengage the two tabs (D), remove the OP cover Assy ②.

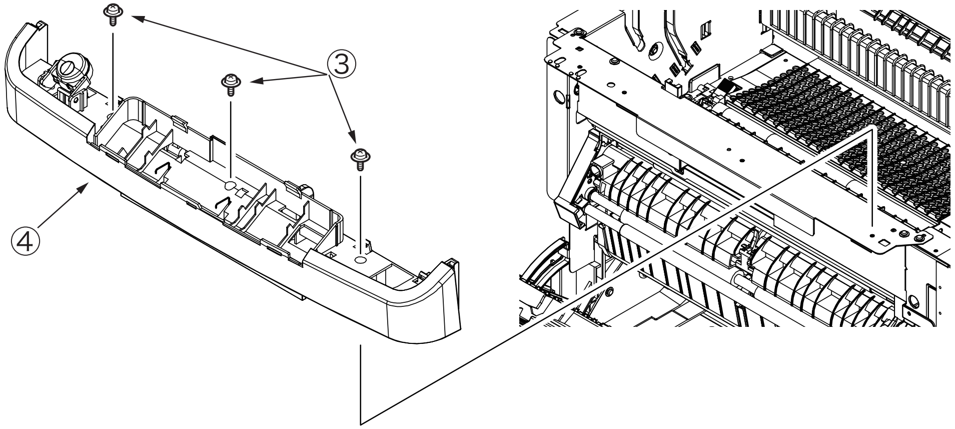
(7) Remove the FFC cable from the Ope board.



(8) Remove the three tip round screws (black-colored)(6mm) ③, remove the OP frame ④. (tool number 1)

(Note on removing / installing)

1. Do not insert or remove the FFC cable at an angle.
2. To install the OP cover Assy ②, Put the excess of the FFC cable in the space under the hole on the OP frame ④.



4.2.14 Ope Board Assy

(1) Open the Top Cover.

(2) Open the Multi-Purpose Tray.

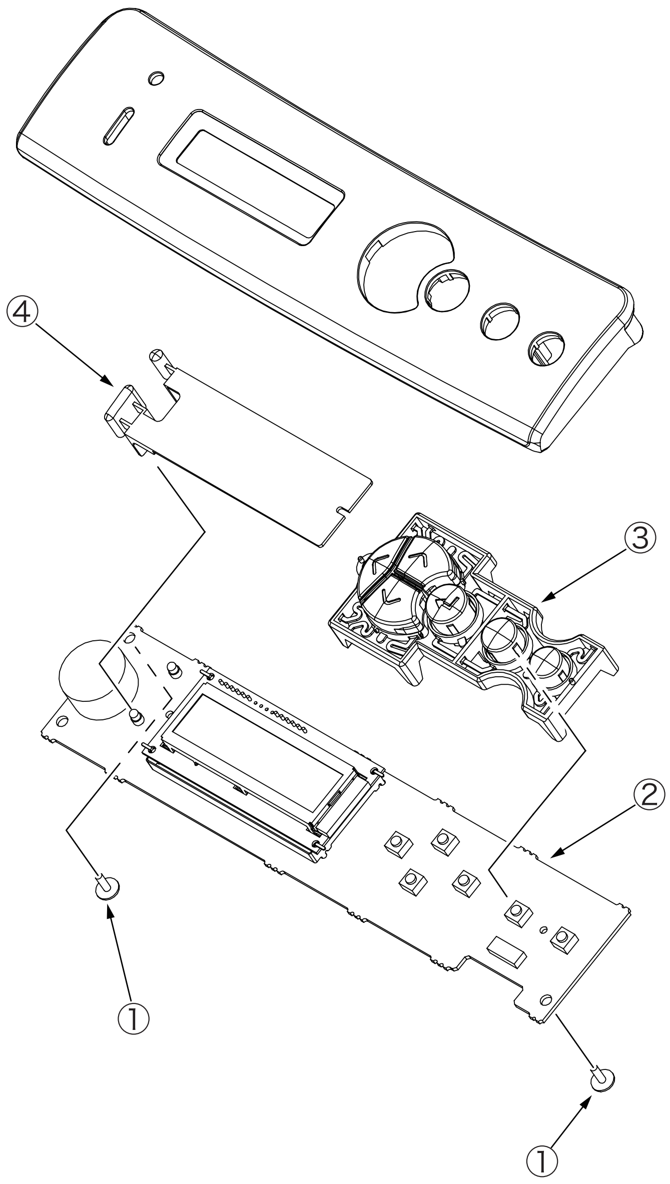
(3) Open the Front Cover.

(4) Remove the Left Side Cover / Right Side Cover. (see section 4.2.3 / 4)

(5) Remove the OP cover Assy. (see section 4.2.13)

(6) Remove the two screws (black-colored)(8mm) ①, remove the Ope board Assy ②. (tool number 1)

(7) Remove the button key ③ and LCD cover ④.



4.2.15 Front Cover

(1) Open the Top Cover.

(2) Open the Multi-Purpose Tray.

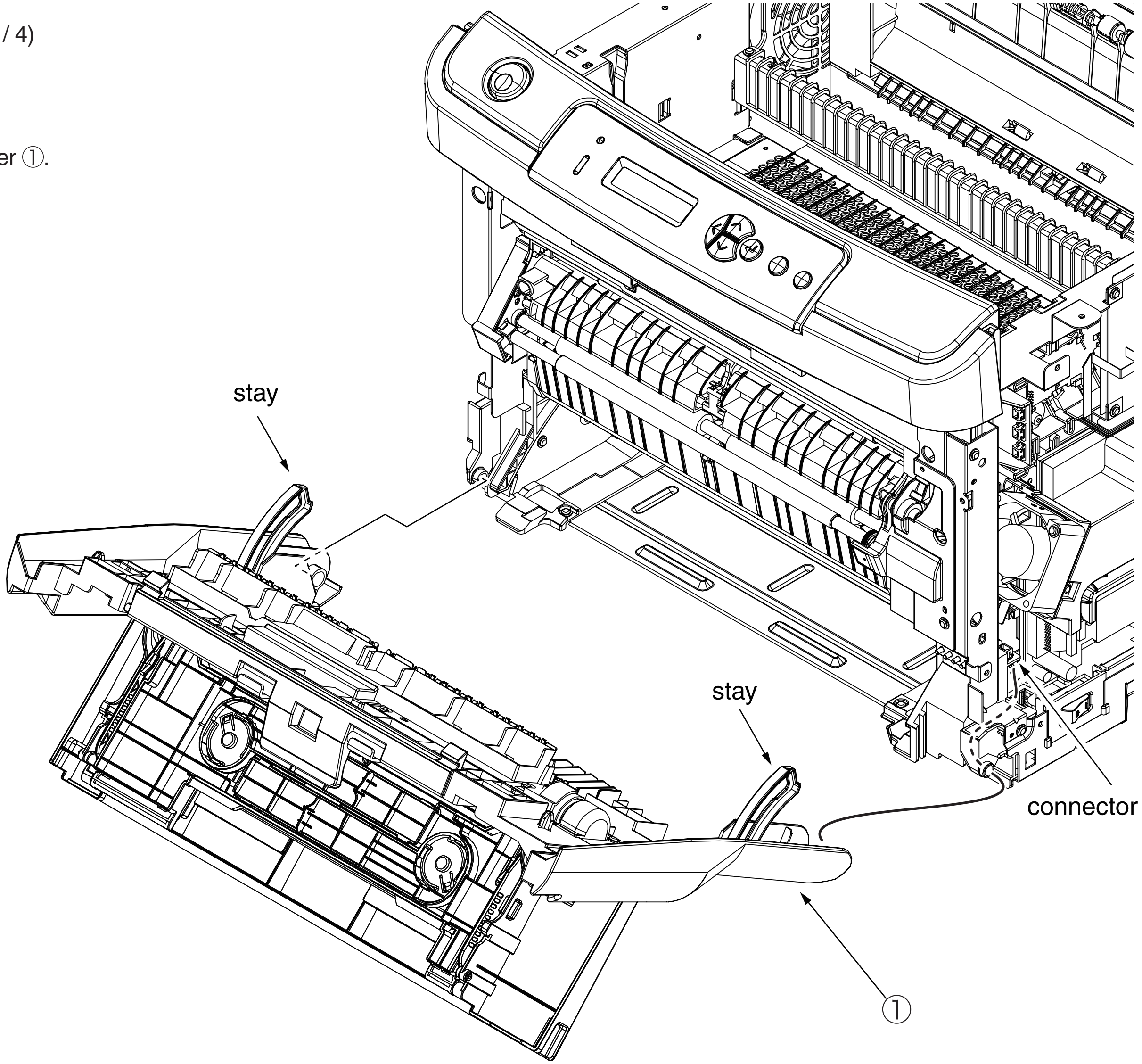
(3) Open the Front Cover.

(4) Remove the Left Side Cover / Right Side Cover. (see section 4.2.3 / 4)

(5) Remove the Plate Shield Assy. (see section 4.2.7)

(6) Remove the connector of the MPT clutch.

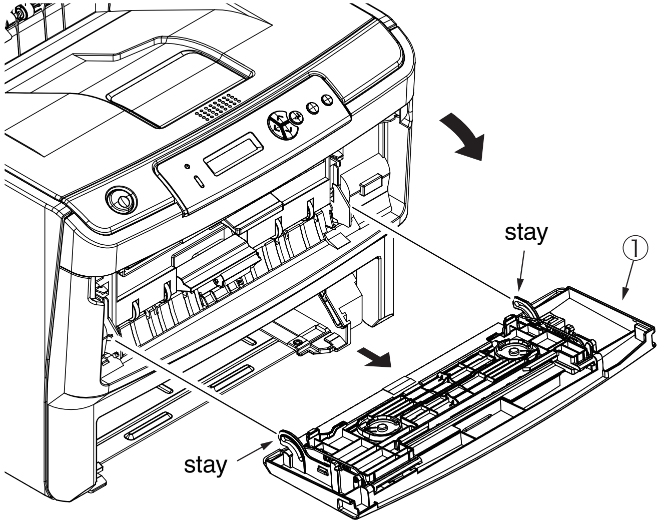
(7) Warp and remove the stay on each side and detach the Front Cover ①.



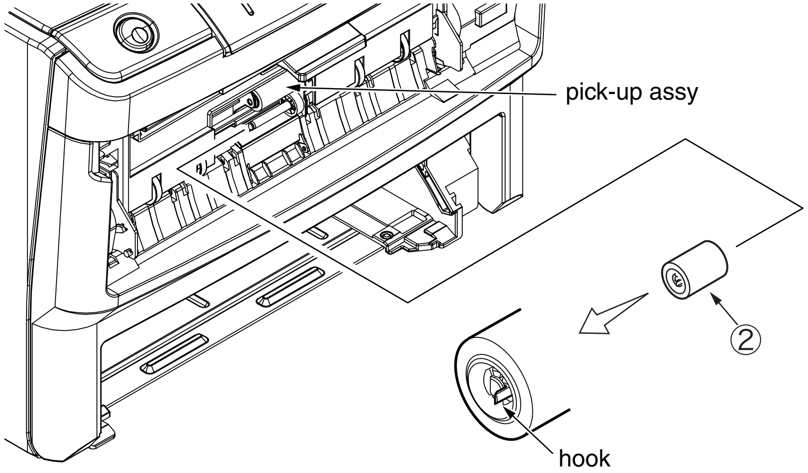
4.2.16 MPT Assy., MPT hopping roller, separator and pick-up roller

(1) Remove the paper cassette.

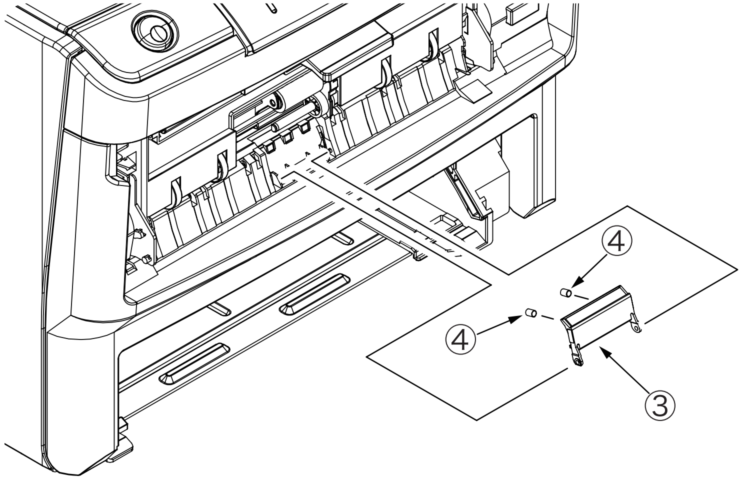
(2) Open the MPT cover Assy ①, remove the stay on each side by bending them outward, and detach the MPT cover Assy ①.



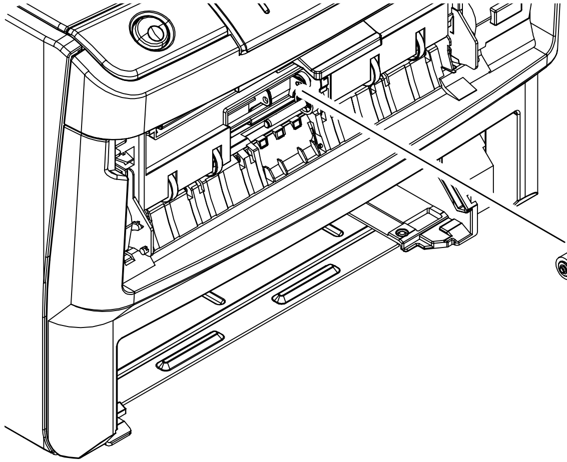
(3) Lift the pick-up Assy. and, bowing the lug of the paper feed roller ③, slide the roller to the left to detach the roller.



(4) Turn the separator Assy. frontward around its two support points to disengage the Assy. at the points to detach the separator ④ and the two springs ⑤.



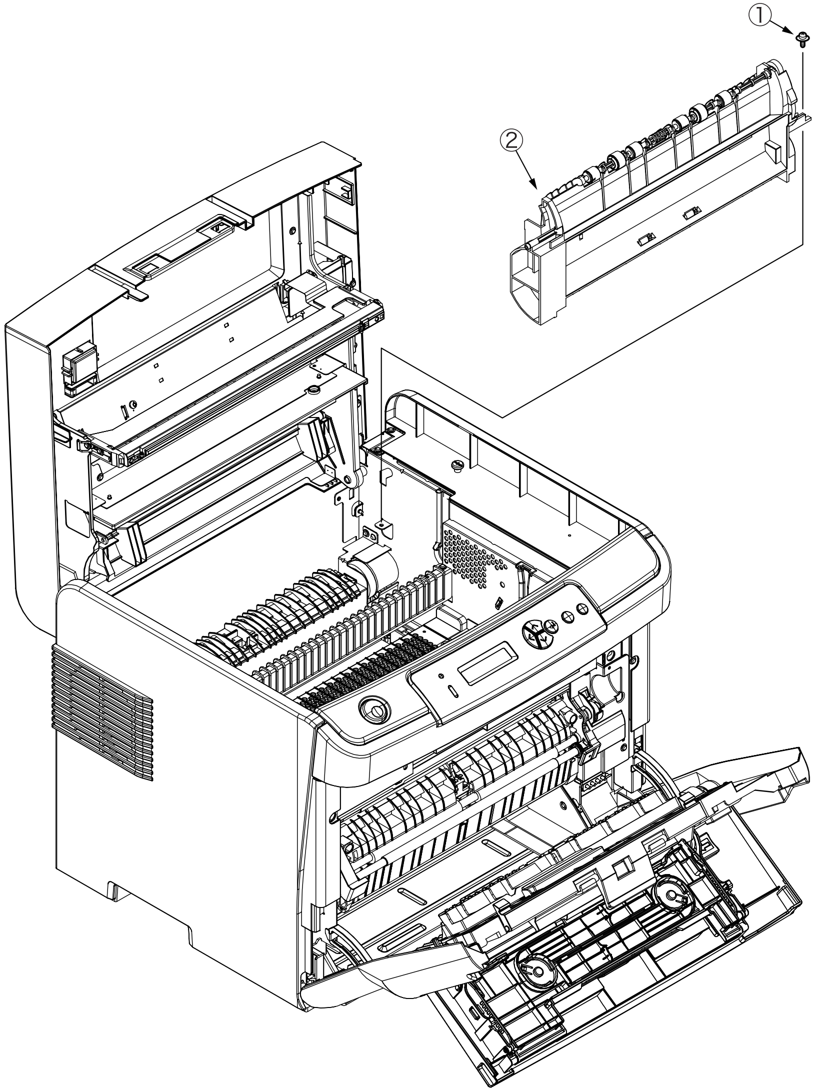
(5) Warping the side of the frame, detach the pick-up roller ⑥.



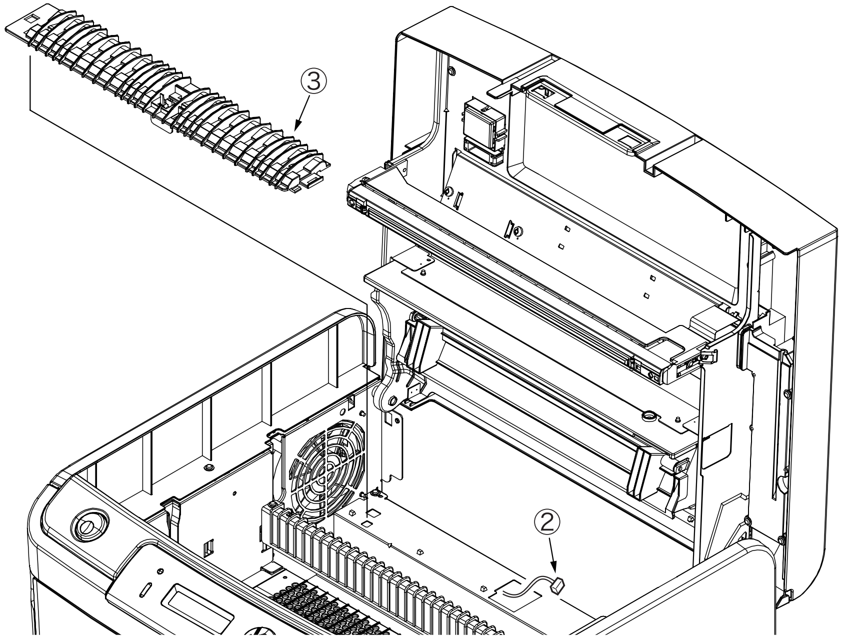
4.2.17 Guide-Eject-Assy-Upper / Lower

(1) Remove the Rear Cover Assy. (see section 4.2.5).

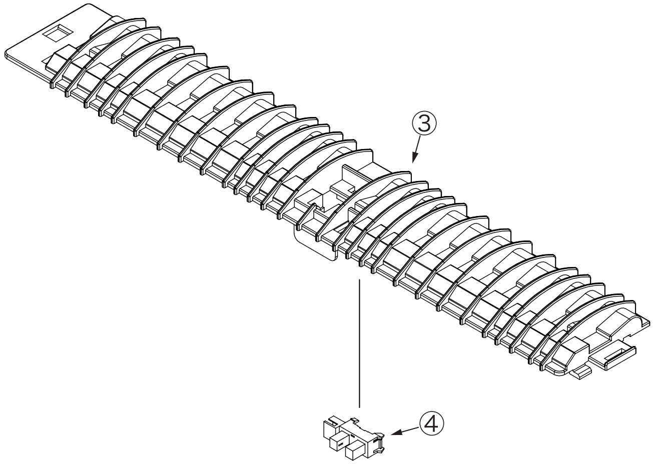
(2) Remove the screw (silver-colored) (6mm)①, remove the Guide-Eject-Assy-Upper ②. (tool number 1).



(3) Disconnect the connector ② and remove the Guide-Eject-Assy-Lower ③ by sliding it to the left.



(4) Remove the Eject sensor ④.



4.2.18 Frame Assy Feed Lower

(1) Open the Top Cover.

(2) Open the Multi-Purpose Tray.

(3) Open the Front Cover.

(4) Remove the Left Side Cover / Right Side Cover. (see section 4.2.3 / 4)

(5) Remove the Plate Shield Assy. (see section 4.2.7)

(6) Remove the connector ① and ② from the CU/PU board.

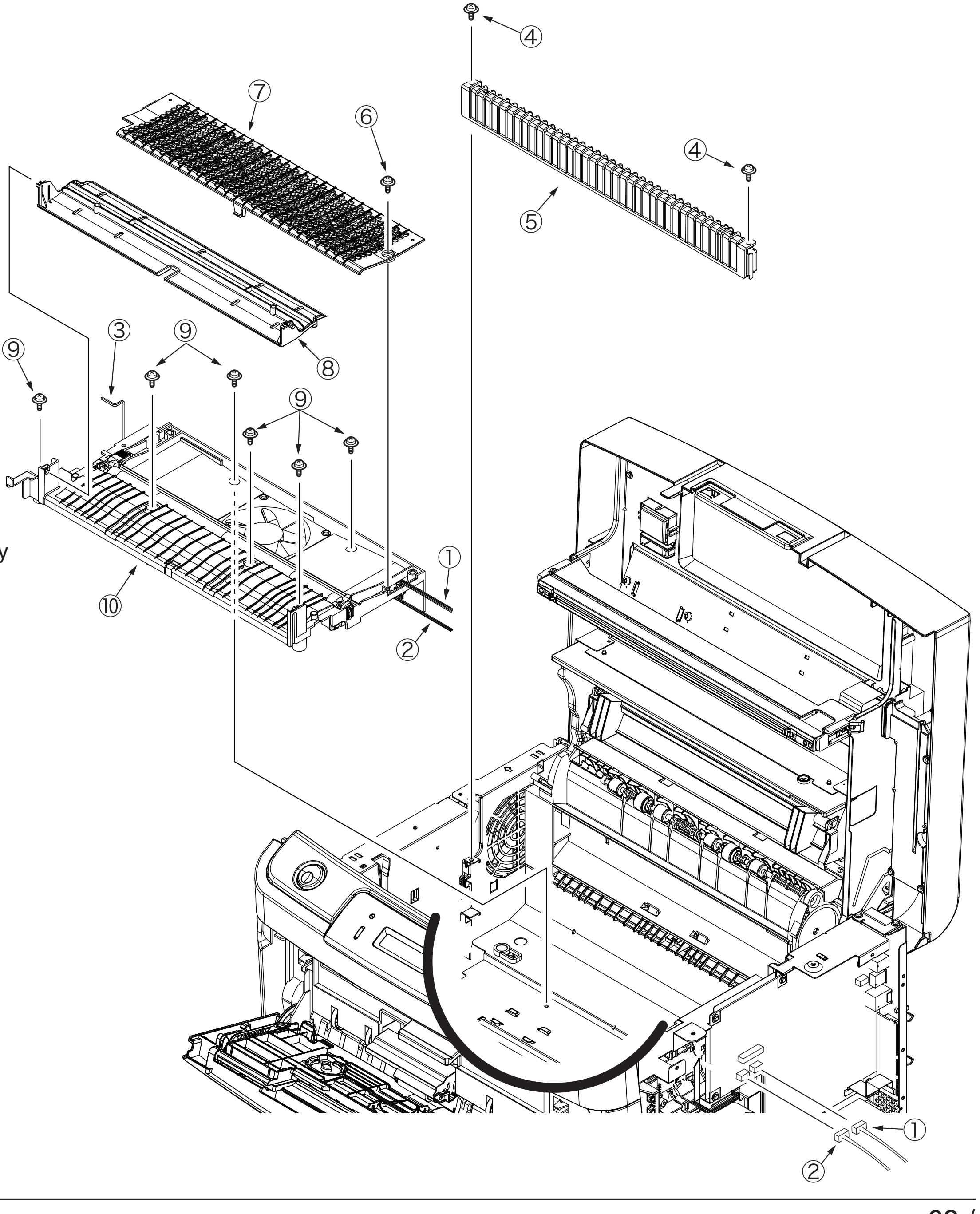
(7) Remove the HV-board, remove the connector ③.
(see section 4.2.12)

(8) Remove the two screws (silver-colored)(6mm) ④, remove the Beam-Fuser-Assy ⑤. (tool number 1)

(9) Remove the screw (black-colored)(8mm) ⑥, remove the Cover-Feed ⑦. (tool number 1)

(10) Remove the Frame-Feed-Upper ⑧ by bending the support on each side.

(11) Remove the six screws (silver-colored)(6mm) ⑨, remove the Frame Assy Feed Lower ⑩. (tool number 1)



4.2.19 Top Cover Assy

(1) Open the Top Cover.

(2) Open the Multi-Purpose Tray.

(3) Open the Front Cover.

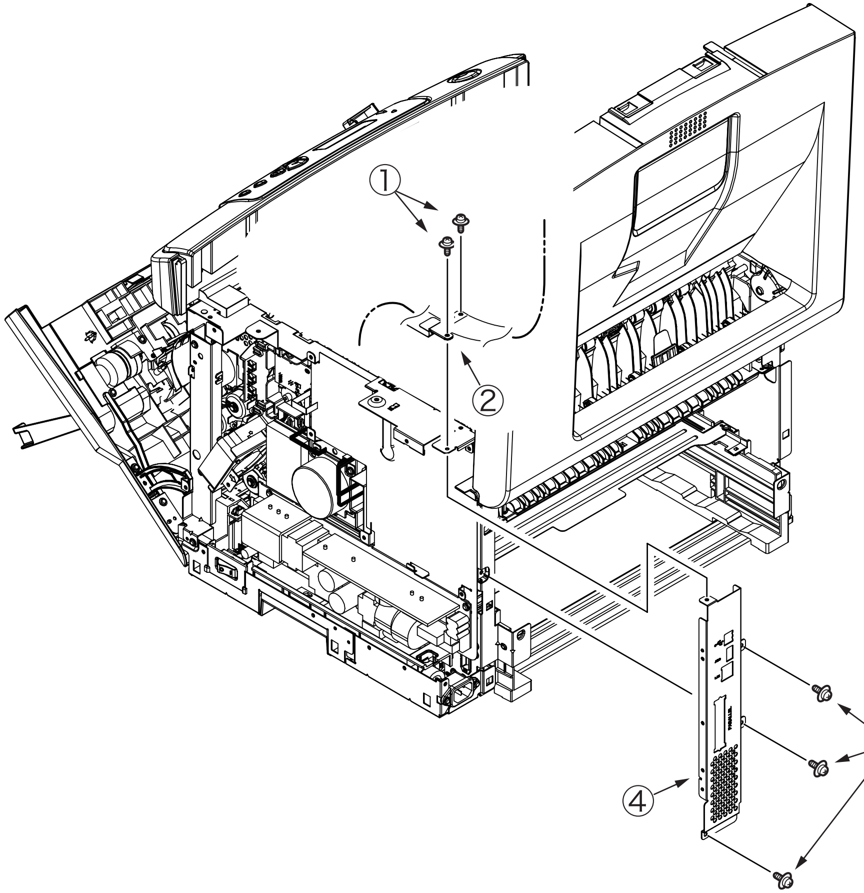
(4) Remove the Left Side Cover / Right Side Cover. (see section 4.2.3 / 4)

(5) Remove the Rear Cover. (see section 4.2.5)

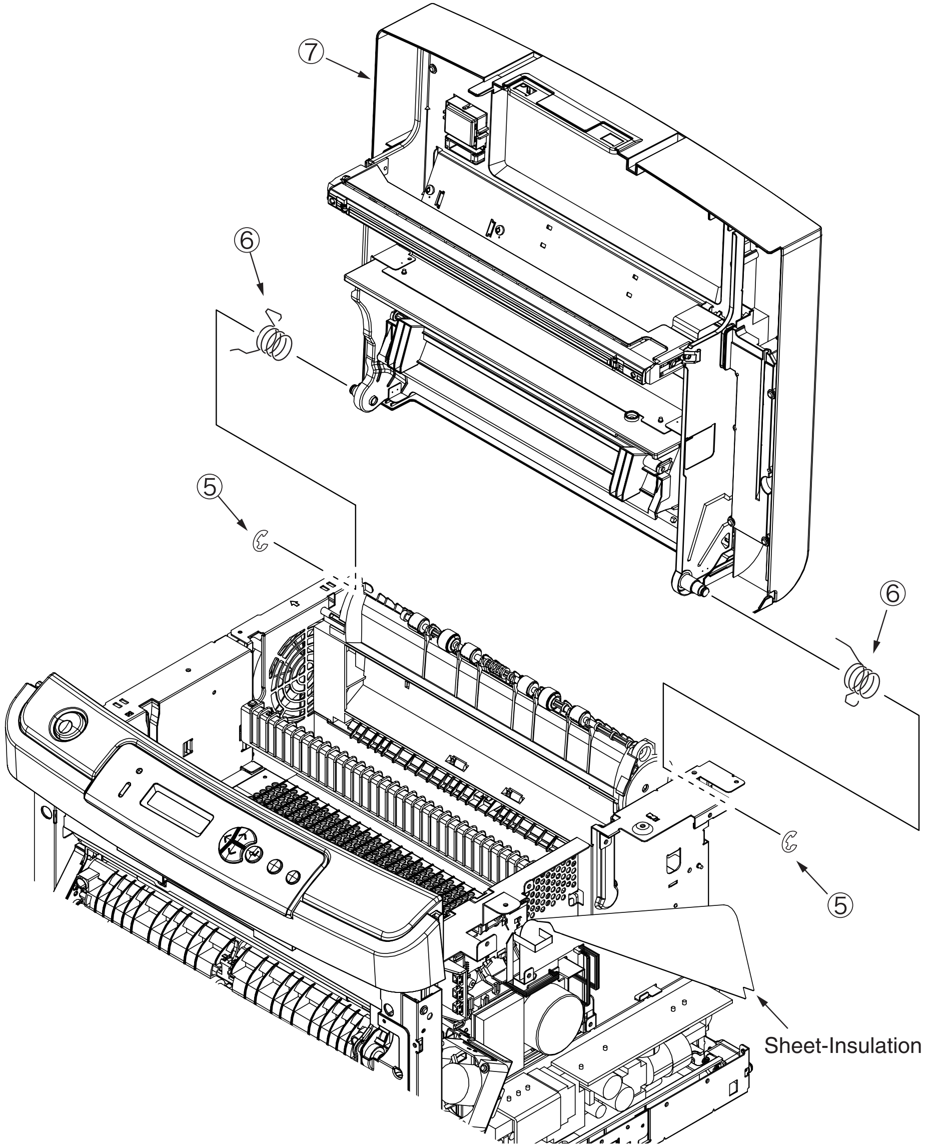
(6) Remove the CU/PU board. (see section 4.2.7)

(7) Remove the two screws (silver-colored)(6mm) ①, remove the Cable Assy Head ②.

(8) Remove the three screws (silver-colored)(6mm) ③, remove the Plate-Shield-CU ④.



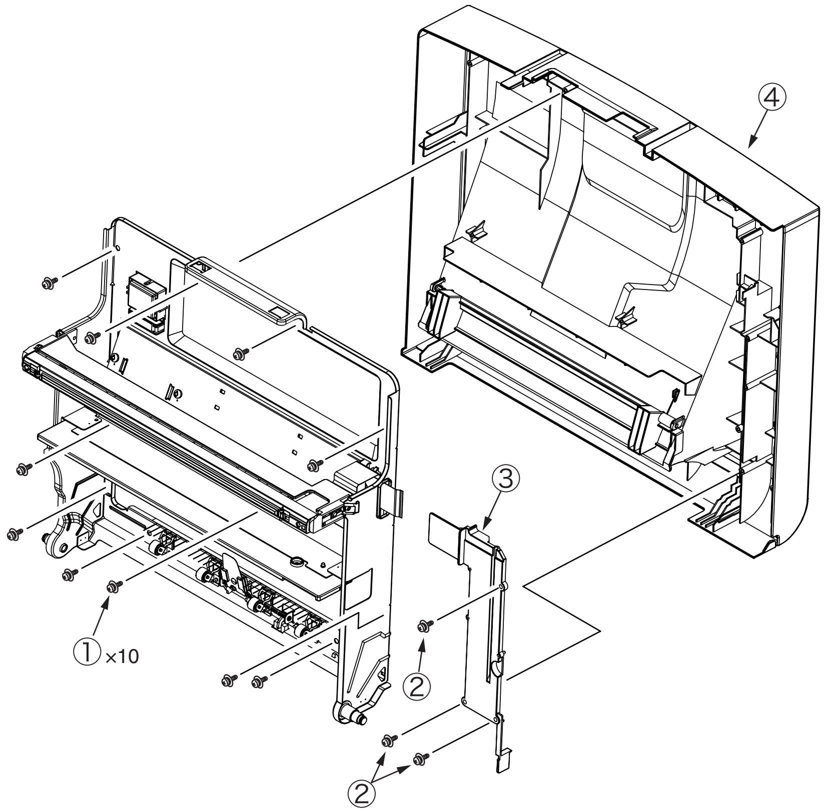
(9) Remove the two E-rings ⑤, remove the two torsion springs ⑥ to detach the Top Cover Assy ⑦.



4.2.20 Top Cover

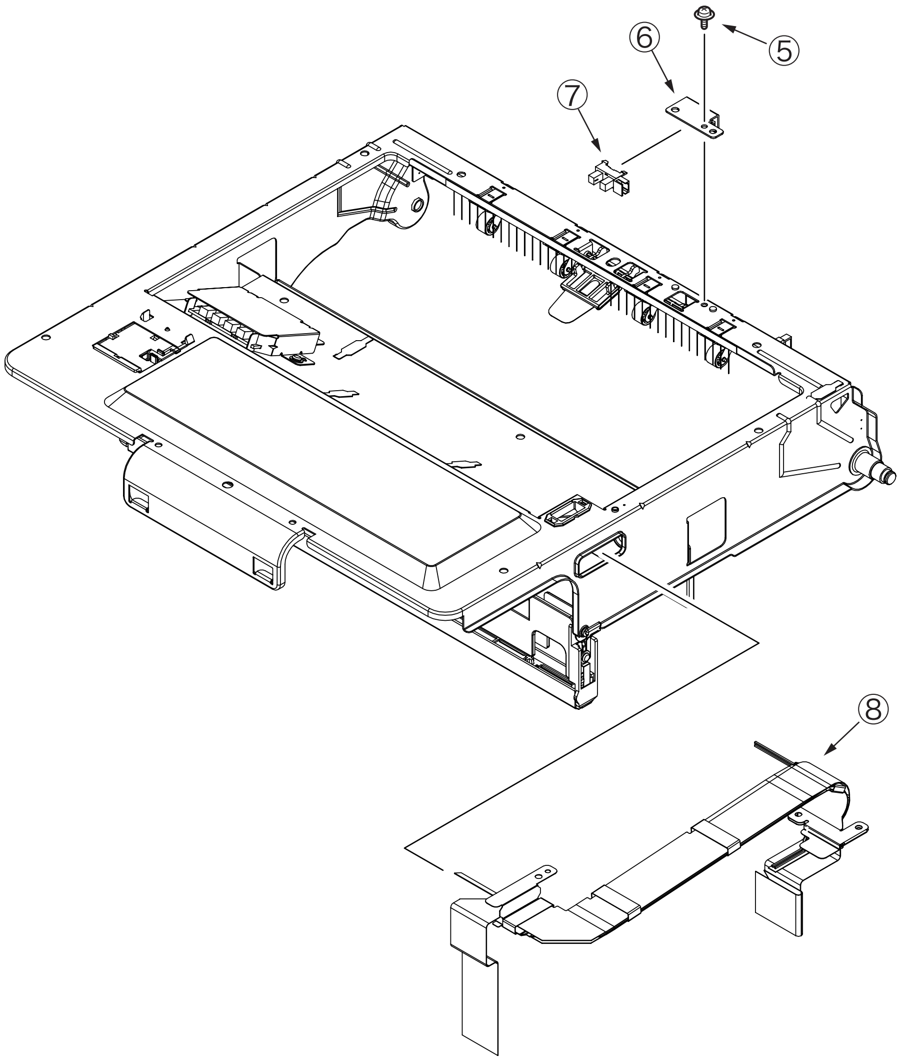
(1) Remove the Top Cover Assy. (see section 4.2.19)

(2) Remove the ten screws (black-colored)(8mm) ①, three screws (black-colored) (8mm) ② and remove the cable cover ③ and the Top Cover ④. (tool number 1)



(3) Remove the screw (silver-colored)(6mm) ⑤, remove the Sensor Bracket ⑥, and remove the sensor ⑦.

(4) Remove the Cable Assy Head ⑧.



4.2.21 Roller Assy Regist

(1) Open the Top Cover.

(2) Open the Multi-Purpose Tray.

(3) Open the Front Cover.

(4) Remove the Left Side Cover / Right Side Cover. (see section 4.2.3 / 4)

(5) Remove the Main Motor. (see section 4.2.10)

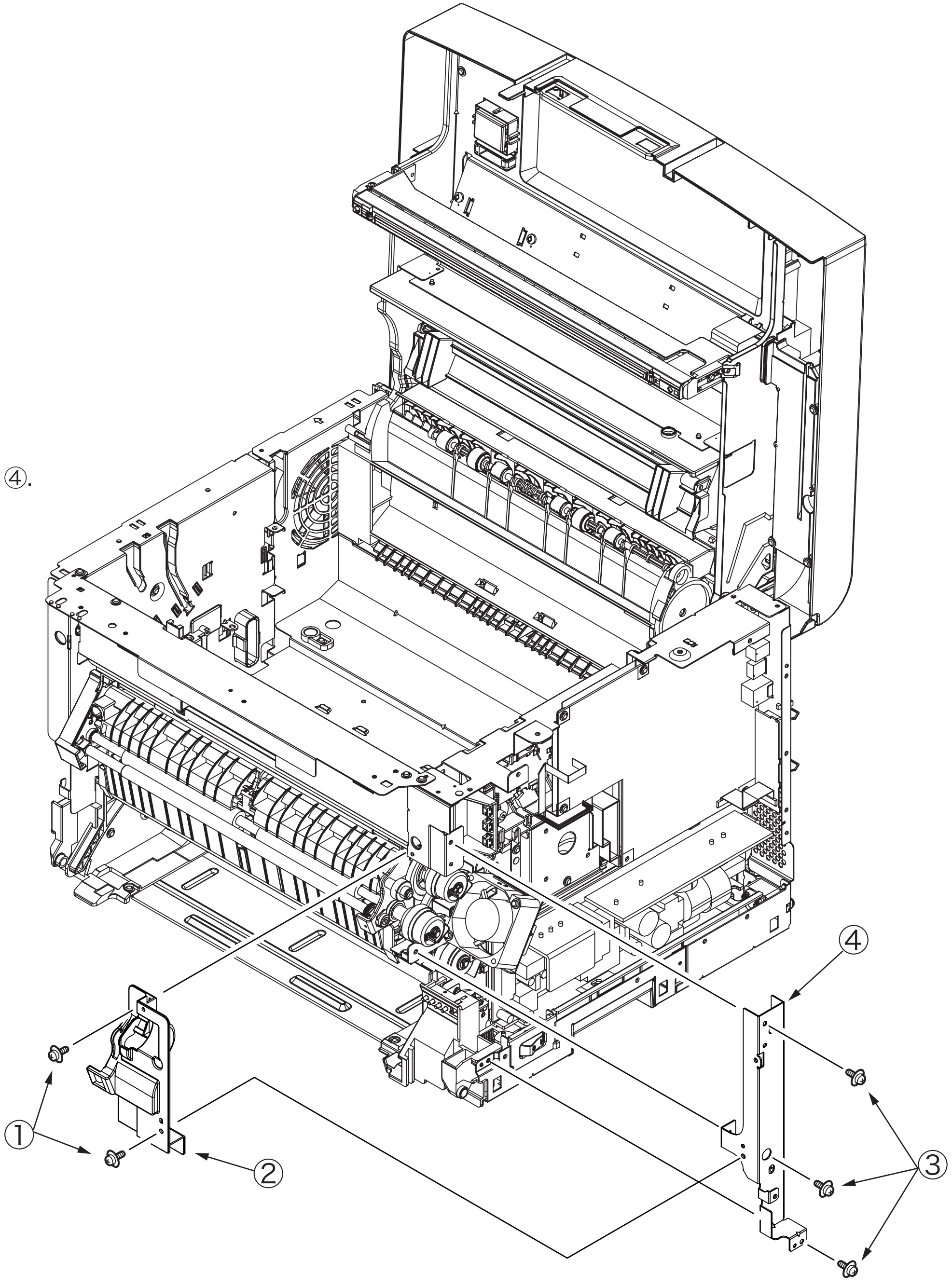
(6) Remove the Cnotrol Panel Assy. (see section 4.2.13)

(7) Remove the Front Cover. (see section 4.2.15)

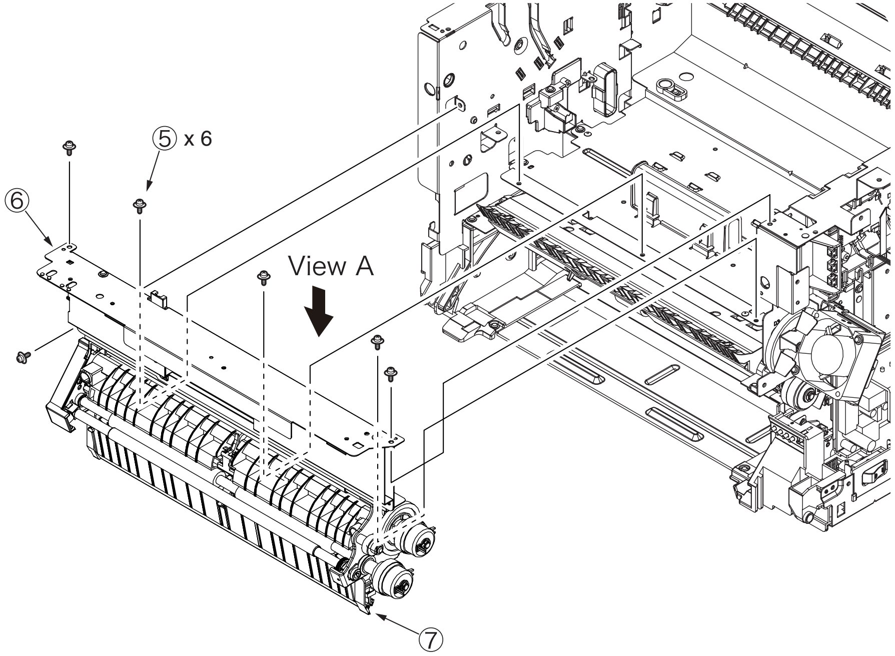
(8) Remove the Frame-Assy-Feed Lower. (see section 4.2.18)

(9) Remove the two screws (silver-colored)(6mm) ①, remove the Gear Cover ②.

(10) Remove the three screws (silver-colored)(6mm) ③, remove the Plate-Support ④.

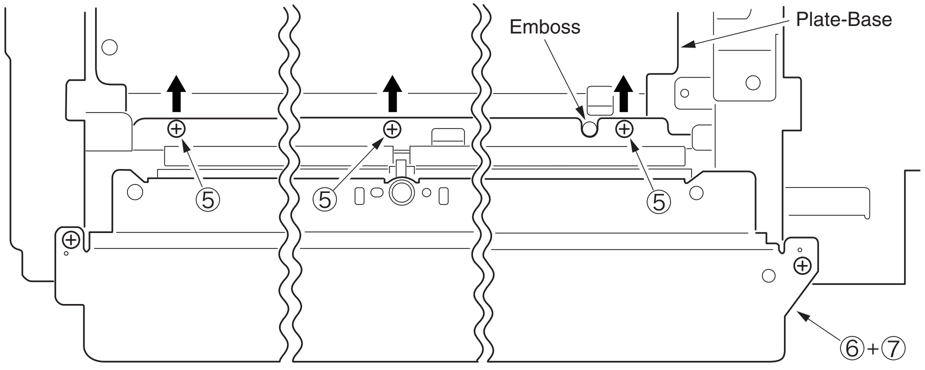


(11) Remove the six screws (silver-colored)(6mm) ⑤, remove the Roller Assy Regist (⑥ + ⑦).



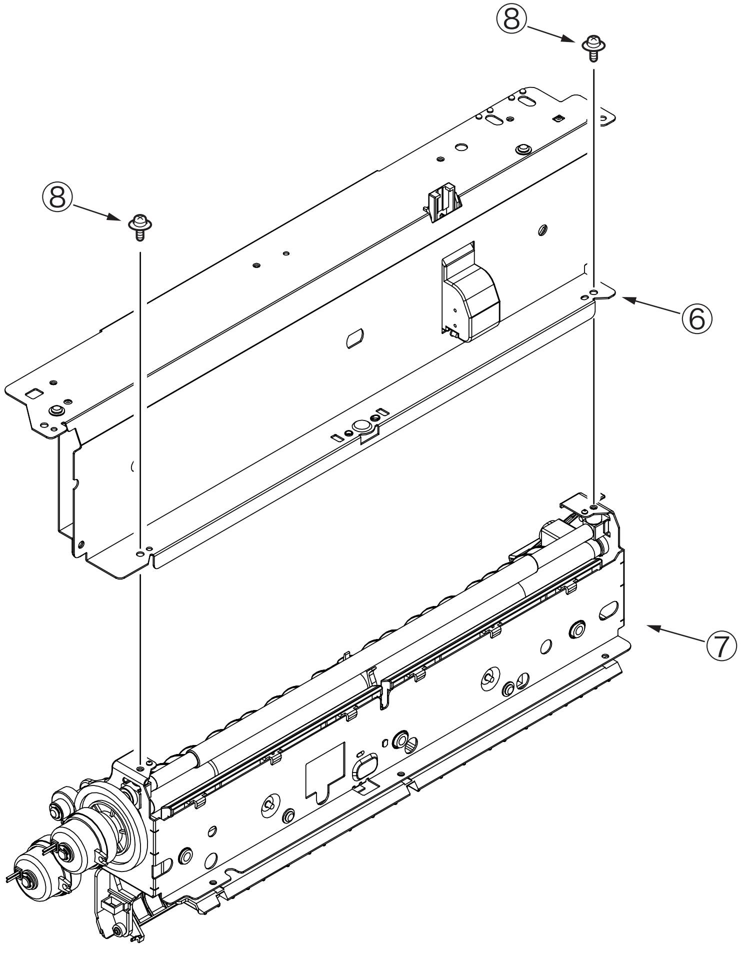
(Note on installing)

Push Roller Assy Regist (⑥ + ⑦) to emboss of Plate-Base, and screw ⑤ while drew the 3 holes to arrow direction, screw ⑤ in the position of center at the end.



View A

(12) Remove the two screws (silver-colored)(6mm) ⑧, and separate the Roller Assy Regist Upper ⑥ and the Roller Assy Regist Lower ⑦.



4.2.22 Board RSF

(1) Remove the Roller Assy Regist Lower. (see section 4.2.21)

(2) Remove the two E-rings ①, remove the two clutchs ②.

(3) Remove the two screws (silver-colored)(6mm) ③, remove the Holder-FG ④.
(tool number 1)

(4) Remove the gear ⑤, remove the two gears ⑥, the two gears ⑦.

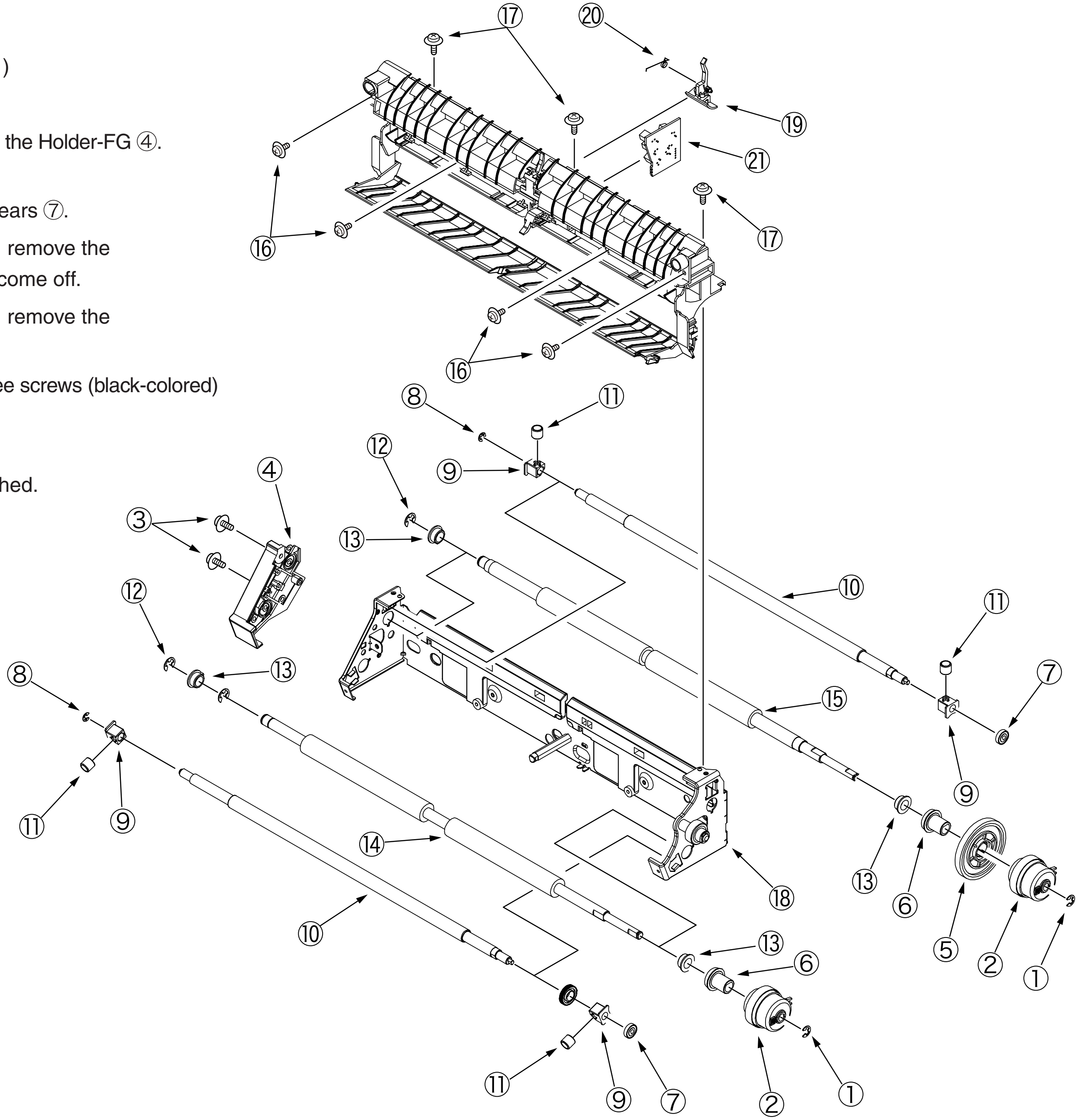
(5) Remove the two E-rings ⑧, remove the four bearings ⑨, remove the two pressure roller ⑩. At that time, four springs ⑪ also come off.

(6) Remove the two E-rings ⑫, remove the four bearings ⑬, remove the regist roller-A ⑭, the regist roller-B ⑮.

(7) Remove the four screws (silver-colored)(6mm) ⑯, the three screws (black-colored) (8mm) ⑰,
Remove the Plate-Holder ⑱.

(8) Remove the Lever-WR ⑲. The springs ⑳ become detached.

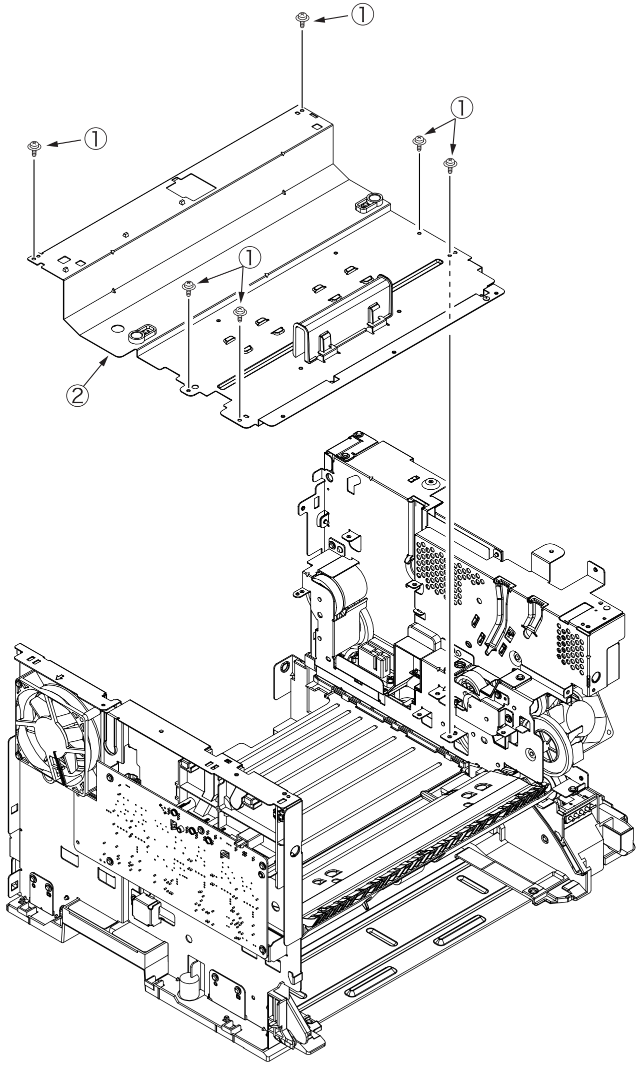
(9) Pull out the connector, Remove the Board RSF ㉑.



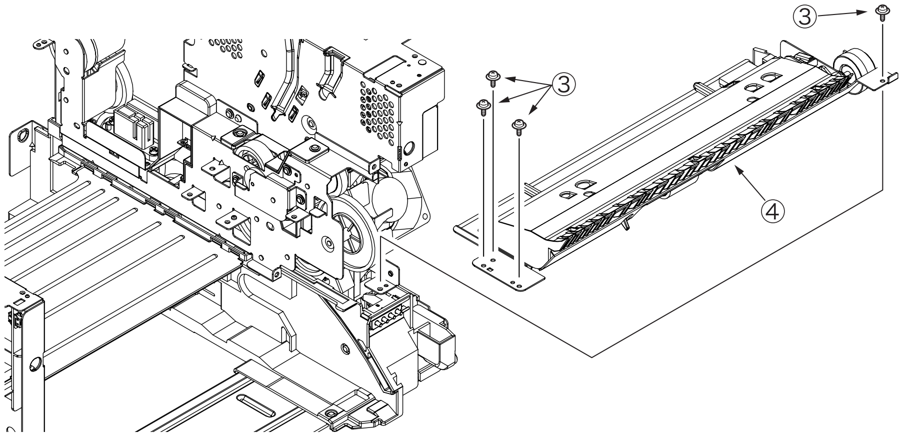
4.2.23 Frame Assy Hopping

(1) Remove the Roller Assy Regist. (see section 4.2.21)

(2) Remove the six screws (silver-colored) (6mm)①, remove the Plate-Base ②.

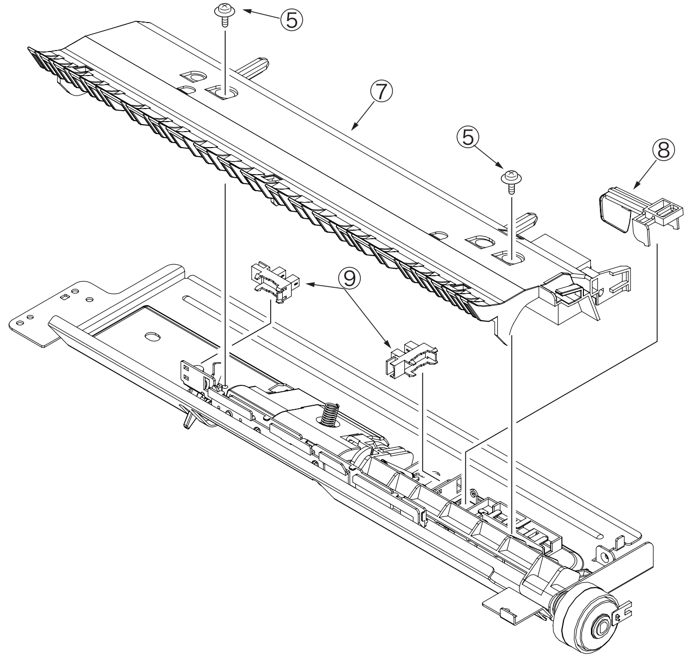


(3) Remove the four screws (silver-colored)(6mm) ③, remove the Frame Assy Hopping ④. (tool number 1)



(4) remove the two tip round screws (black-colored)(8mm) ⑤, remove the Cover-Holder ⑦.

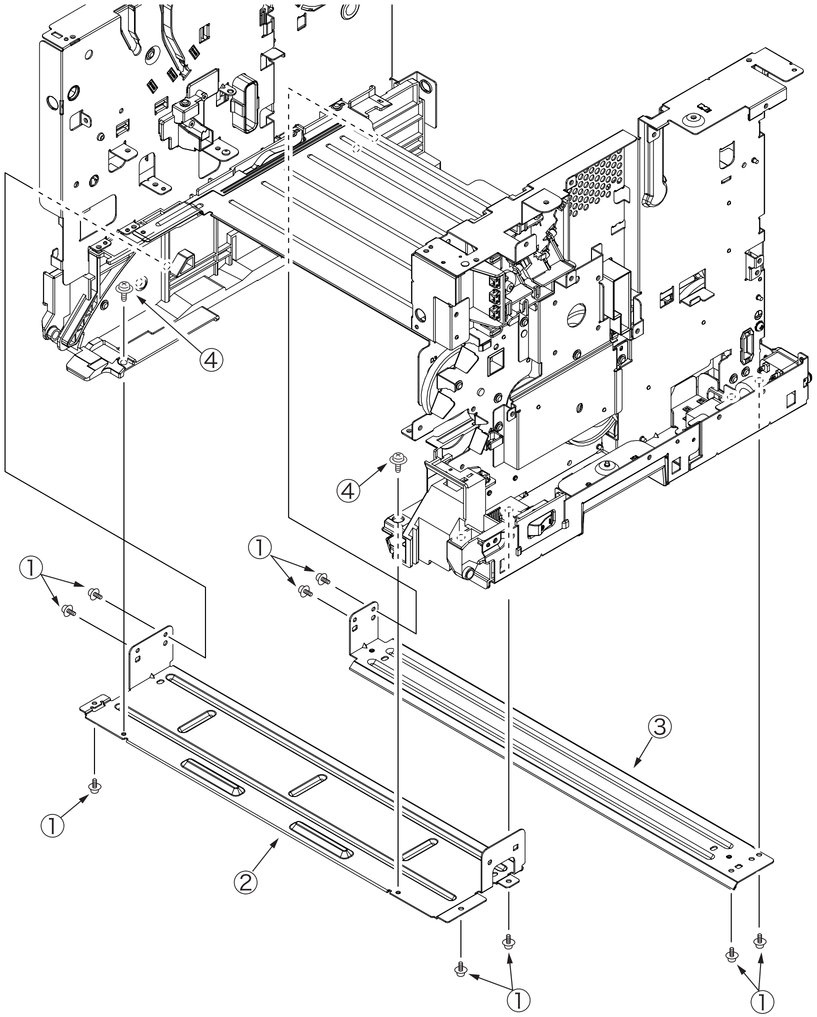
(5) Remove the sensor lever ⑧, remove the sensor ⑨, pull out the connector.



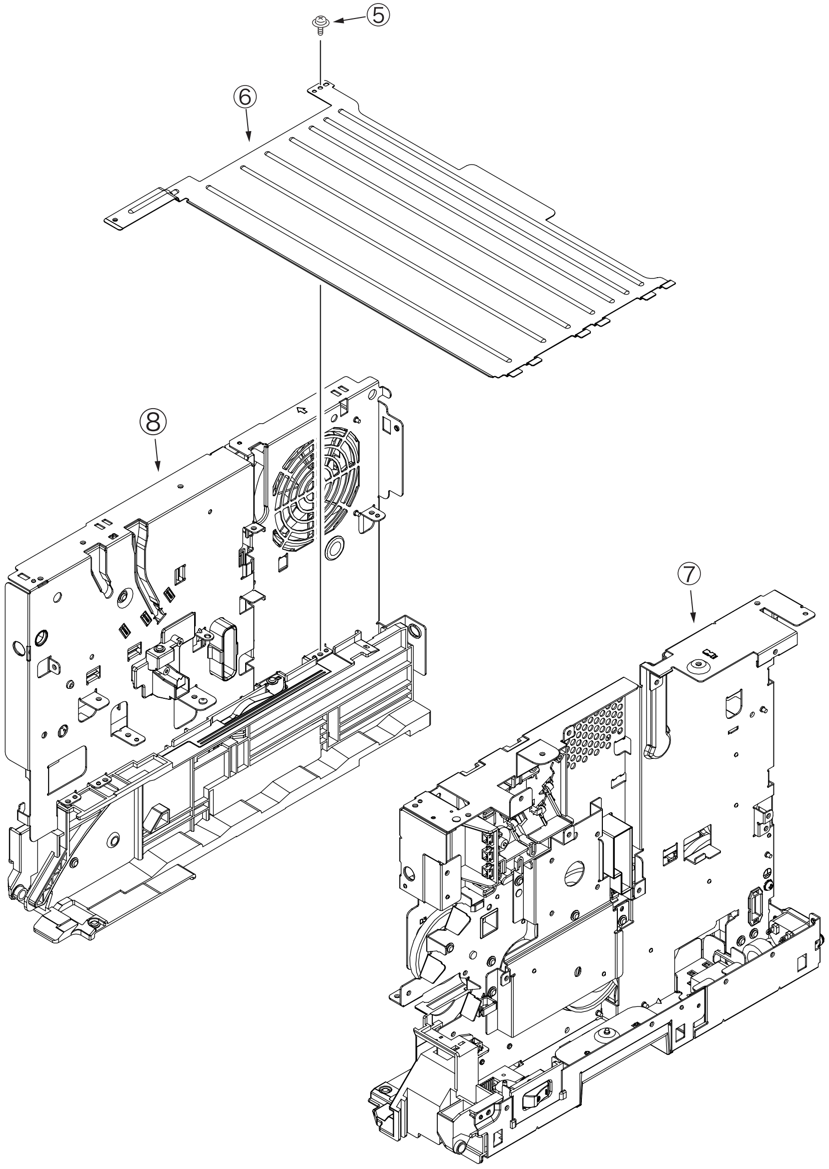
4.2.24 Side R Assy / Side L Assy

(1) Remove the Frame Assy Hopping. (see section 4.2.23)

(2) Remove the nine screws (silver-colored) (6mm)① and the two tip round screws(black-colored)(6mm)④, remove the Plate-Beam-Buttom-F ② and the Plate-Beam-Buttom-R ③. (tool number 1)



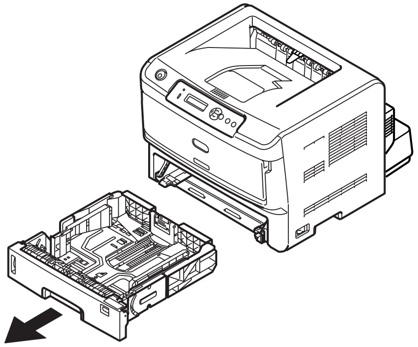
(3) Remove the screw (silver-colored)(6mm) ⑤, separate the Cover-Upper-Cassette ⑥ and the Side R Assy ⑦, the Side L Assy ⑧. (tool number 1)



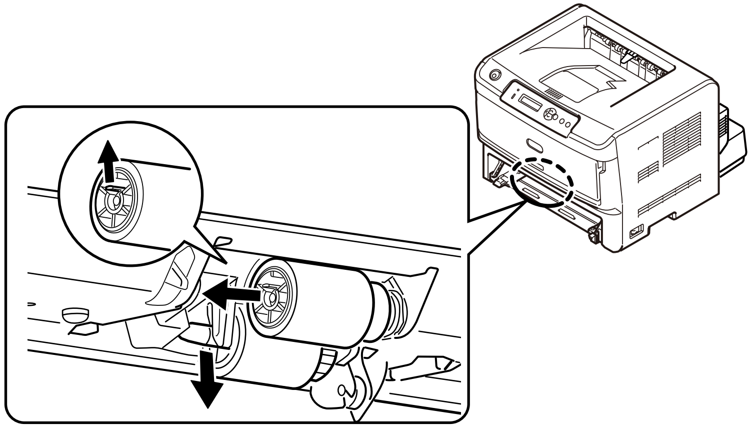
4.2.25 Paper feed roller (tray 1)

Note! Be sure to replace all of the three paper feed rollers.

(1) Turn off the printer and remove the paper cassette of the tray 1.

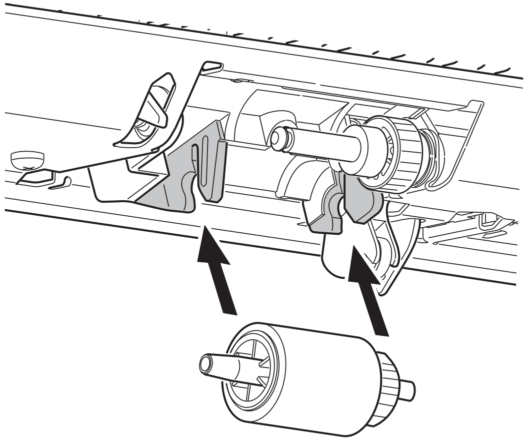


(2) As pressing the protrusion of the front feed roller outward, pull the front feed roller to the left and remove it from the shaft, and then remove the rear feed roller by pulling its shaft downward.

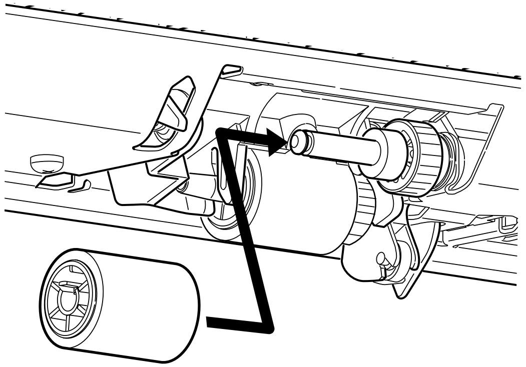


Notes on attaching paper feed roller:

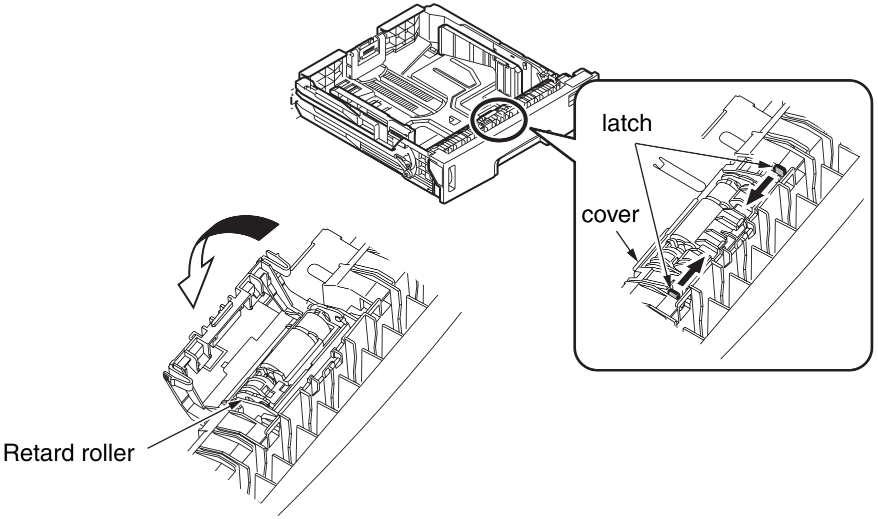
1. Turn the gear of a new paper feed roller (with a gear) to the right, insert its shaft to the catches firmly all the way in place, and check to make sure that it is not detached.



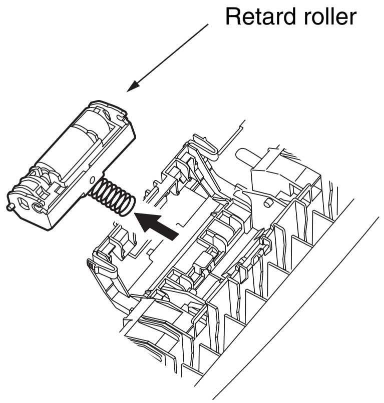
2. Insert a new paper feed roller (with no gears) onto the outside shaft and turn all the way in place. Be sure the rollers are not removed.



(3) Push the protrusion on each side of the paper cassette inward and open the cover.

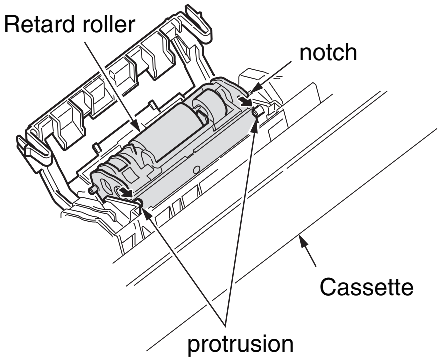

latch
cover
Retard roller

(4) Push the retard roller downward in a slanting direction to remove.

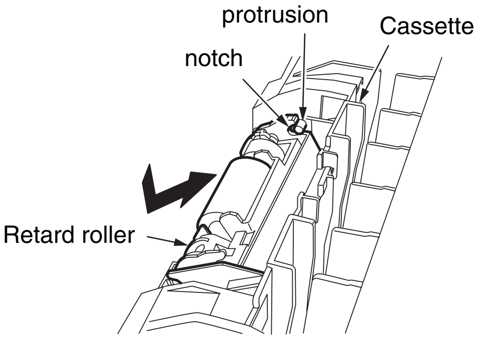

Retard roller

Notes on attaching retard roller

1. Align each notch of the retard roller to each protrusion of the paper cassette.


Retard roller
notch
Cassette
protrusion

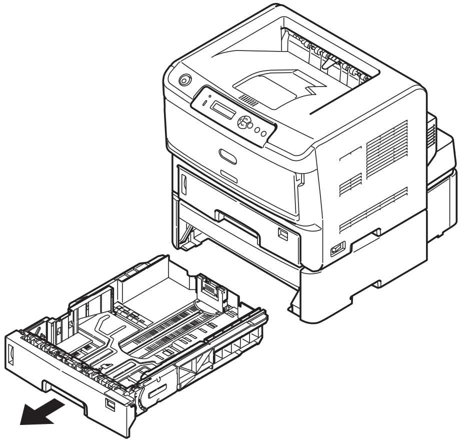
2. Push the retard roller against the paper cassette and fit each notch to each protrusion by pushing the retard roller upward toward you.


protrusion
Cassette
notch
Retard roller

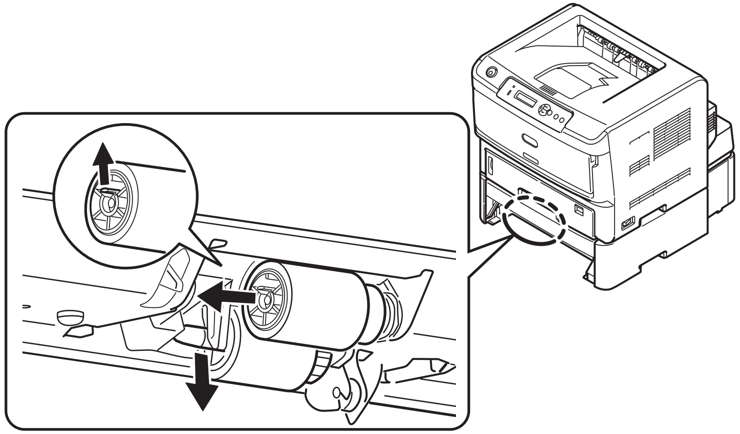
4.2.26 Paper feed rollers (tray 2/3 (option))

Note! Be sure to replace all of the three paper feed rollers.

(1) Turn off the printer and remove the paper cassette of the tray 2/3.

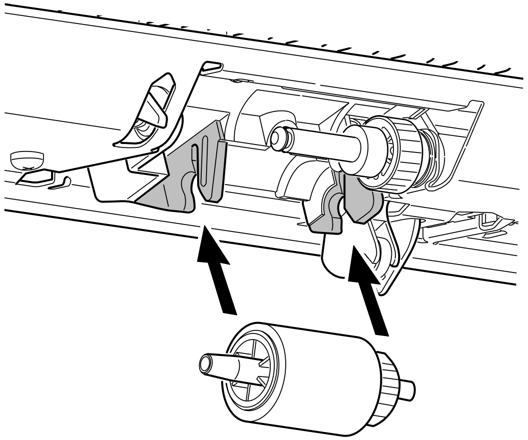


(2) As pressing the protrusion of the front feed roller outward, pull the front feed roller to the left and remove it from the shaft, and then remove the rear feed roller by pulling its shaft downward.

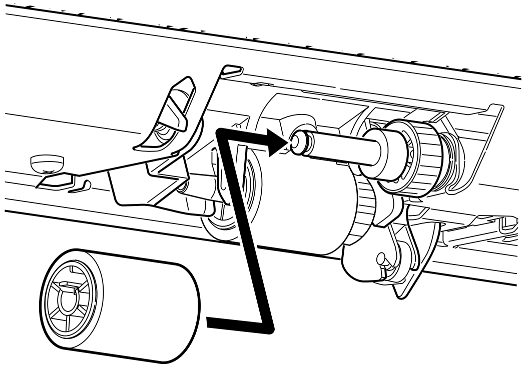


Notes on attaching paper feed rollers

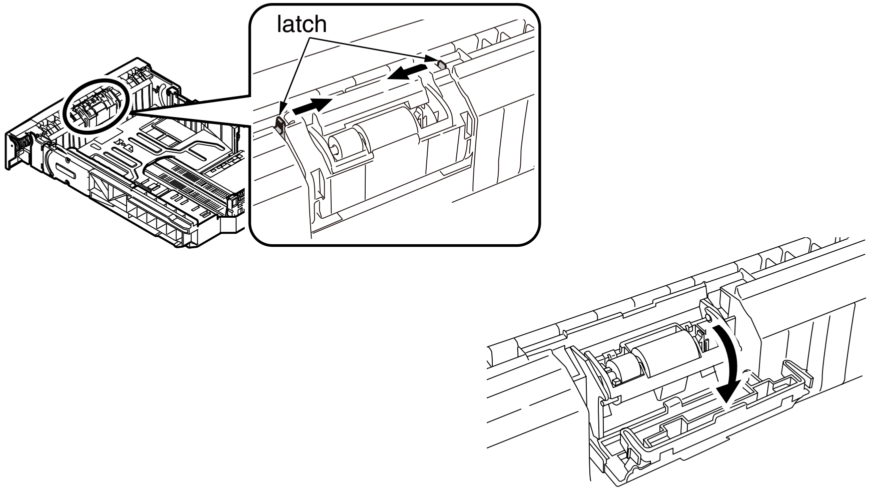
1. Turn the gear of a new paper feed roller (with a gear) to the right, insert its shaft to the catches firmly all the way in place, and check to make sure that it is not detached.



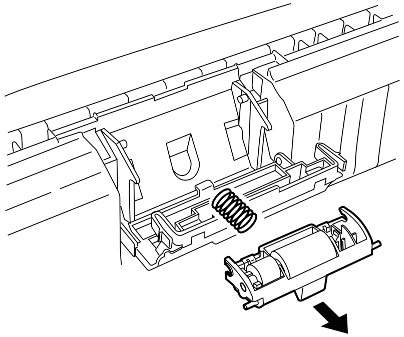
2. Insert a new paper feed roller (with no gears) onto the outside shaft and turn all the way in place. Be sure the rollers are not removed.



(3) Warp the protrusion on each side of the cover on the paper cassette to unlatch the cover and, turning the cover toward the front of the printer, remove the cover.

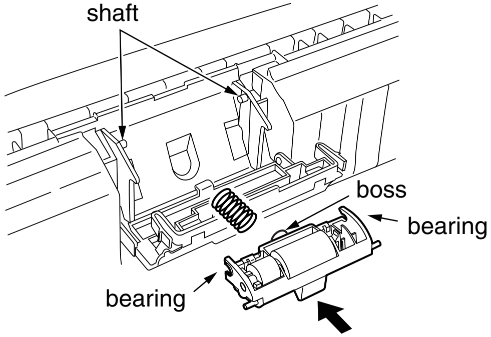


(4) Pull the retard roller Assy. in the direction of the arrow out of its shaft.

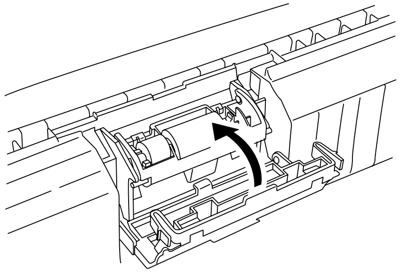


Notes on attaching retard roller Assy.

1. Put the spring onto the boss on the rear of a retard roller Assy., and push the bearing of the Assy. obliquely from below onto the shaft on the side of the cassette.



2. Be sure that the retard roller Assy. moves smoothly around the shaft and the roller turns.



4.3 Portions Lubricated

Portions lubricated are shown in this section.

The other portions must not be lubricated. Lubrication is not required during assembly or disassembly, except that the lubricant specified must be applied to portions from which lubricant was wiped.

Lubrication

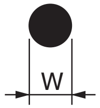
(1) Lubricant names and their abbreviations

EM-30L : Molykote EM-30L
HP-300 : Molykote HP-300
PM : Pan motor oil 10W-40 or ZOA 10W-30

Note!
- Periodic lubrication is not required.
- Use of alternate products is prohibited.

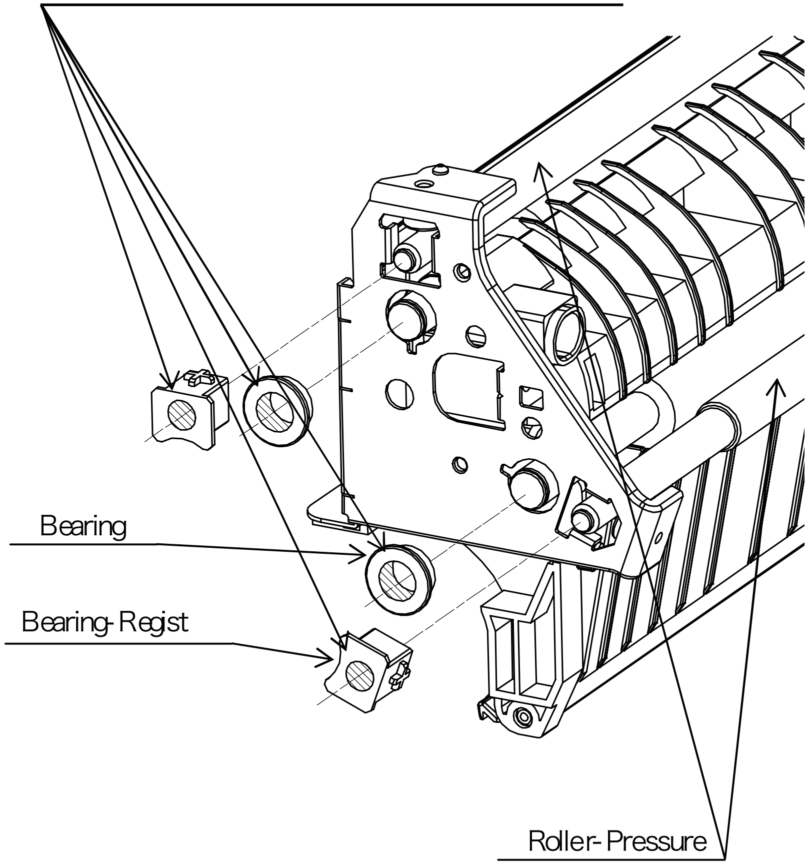
(2) Grease boundary samples

Class	S	A	B	C	D	E	F
Amount Applied (cc)	0.0005	0.003	0.005	0.01	0.03	0.05	0.1
Width (mm)	1.24	2.25	2.67	3.37	4.86	5.76	7.26
Sample	●	●	●	●	●	●	●

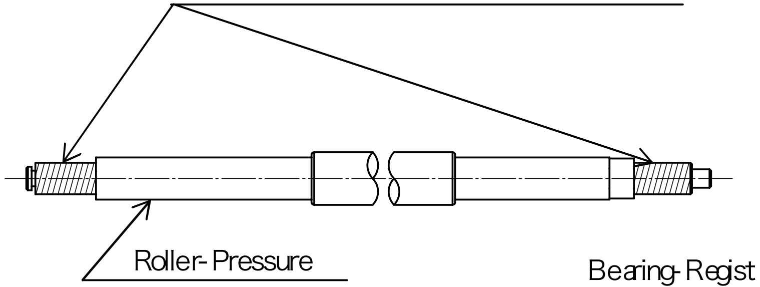


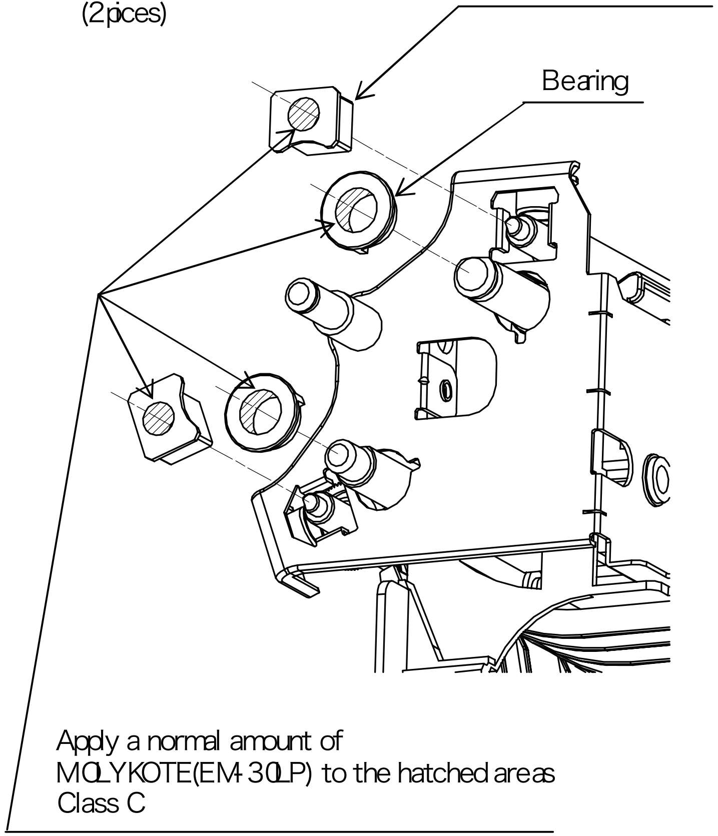
① -1 Roller-Assy-Regist(Lower)

Apply a normal amount of
MOLYKOTE(EM-30LP) to the hatched areas
Class C


Bearing
Bearing-Regist
Roller-Pressure

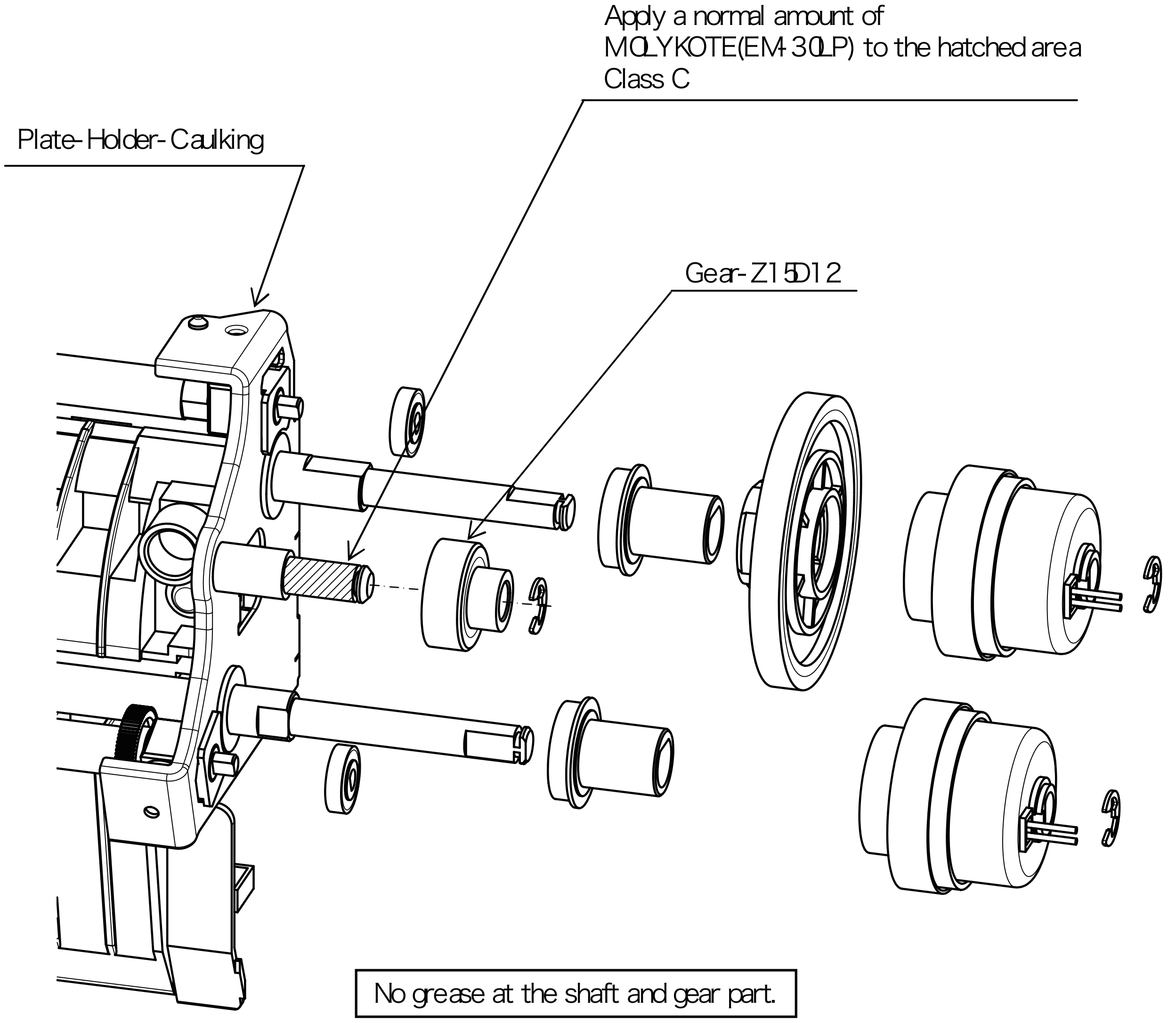
Apply a normal amount of
MOLYKOTE(EM-30LP) to the hatched areas
Class D


Roller-Pressure
(2pices)

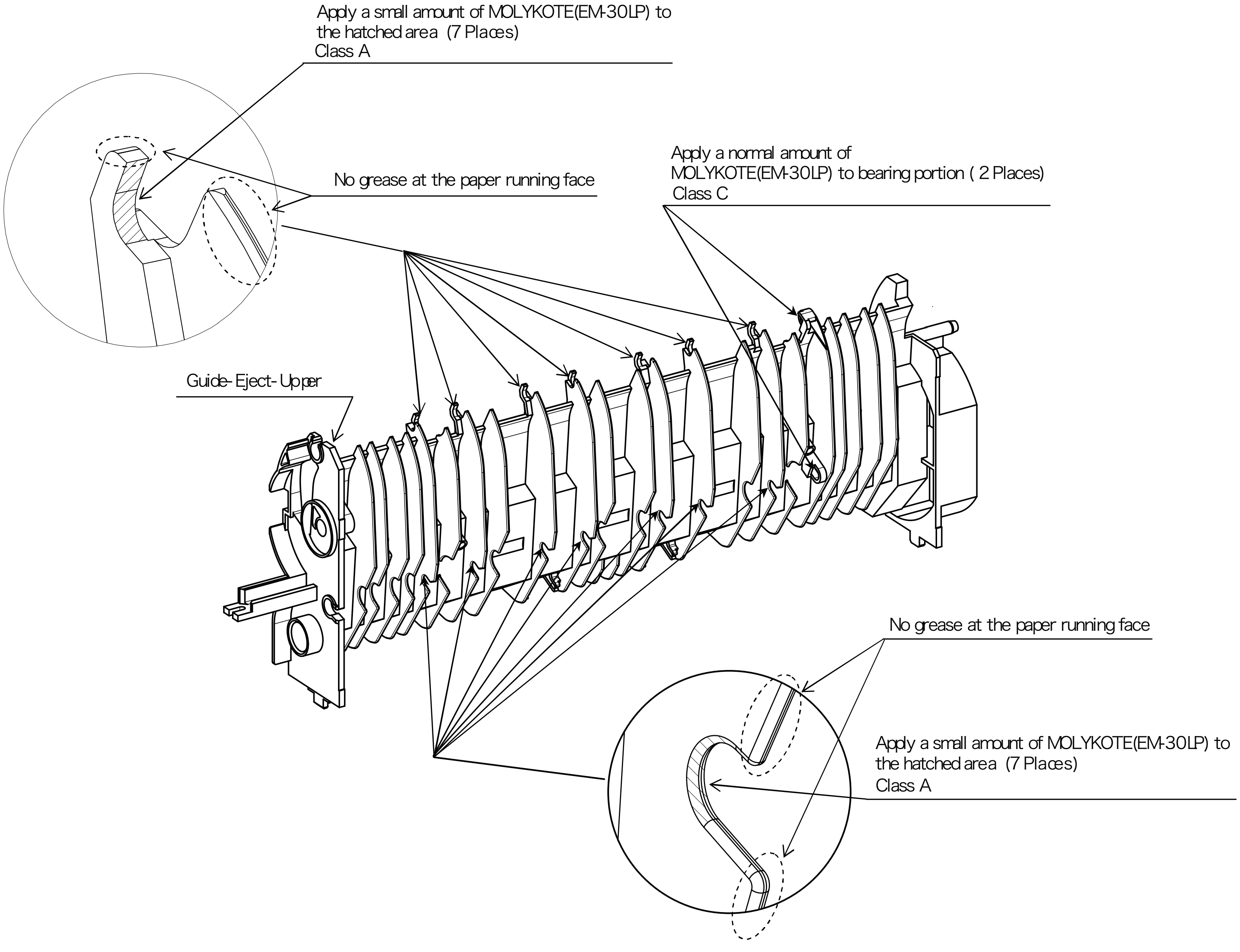

Bearing-Regist
Bearing

Apply a normal amount of
MOLYKOTE(EM-30LP) to the hatched areas
Class C

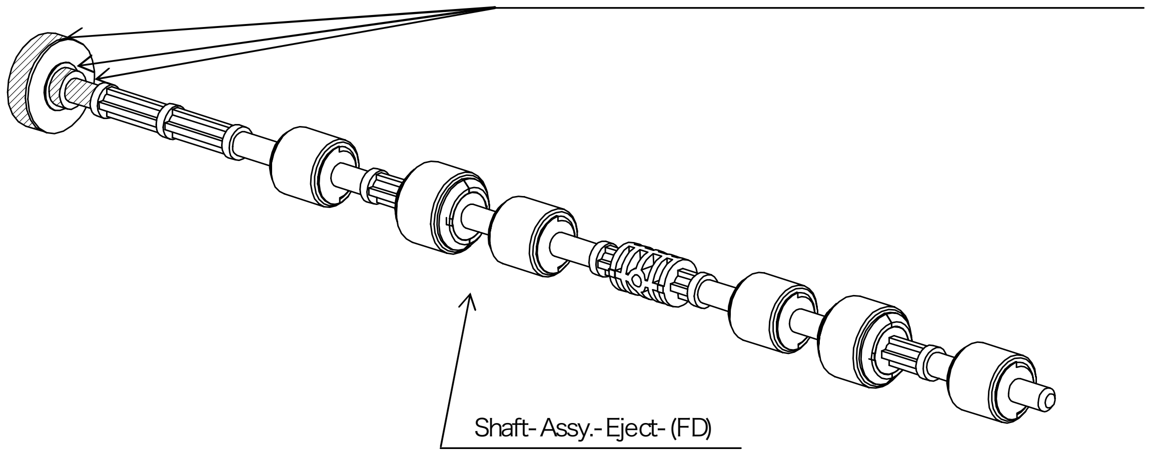
① -2 Roller-Assy-Regist(Lower)


Apply a normal amount of
MOLYKOTE(EM-30LP) to the hatched area
Class C
Plate-Holder-Caulking
Gear-Z15D12
No grease at the shaft and gear part.

② -1 Guide-Eject-Upper

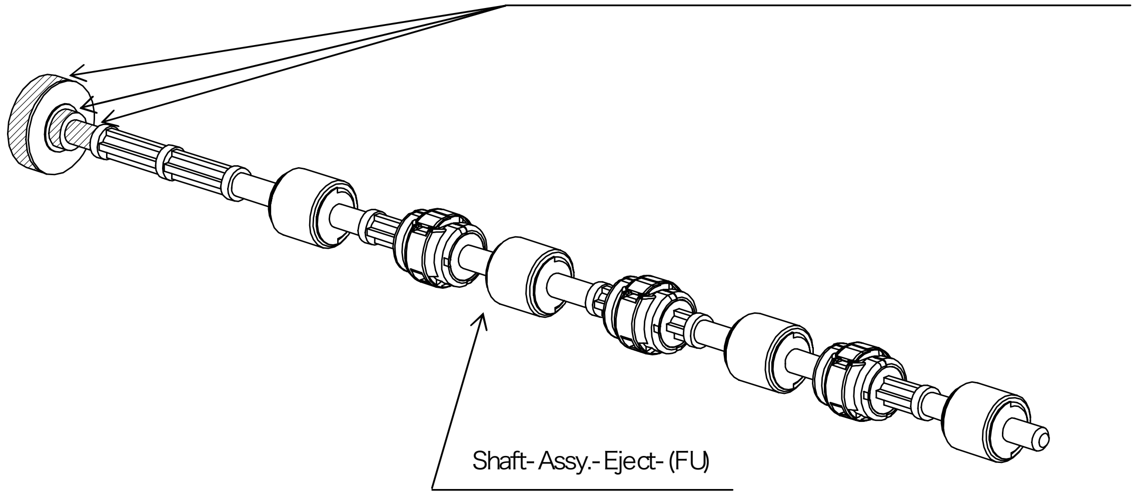

Apply a small amount of MOLYKOTE(EM-30LP) to
the hatched area (7 Places)
Class A
No grease at the paper running face
Apply a normal amount of
MOLYKOTE(EM-30LP) to bearing portion (2 Places)
Class C
Guide-Eject-Upper
No grease at the paper running face
Apply a small amount of MOLYKOTE(EM-30LP) to
the hatched area (7 Places)
Class A

② -2 Guide-Eject-Upper



Apply normal amount of MOLYKOTE(EM-30LP) to the surface of gear of gear teeth, shaft, and the flange portions
Class C

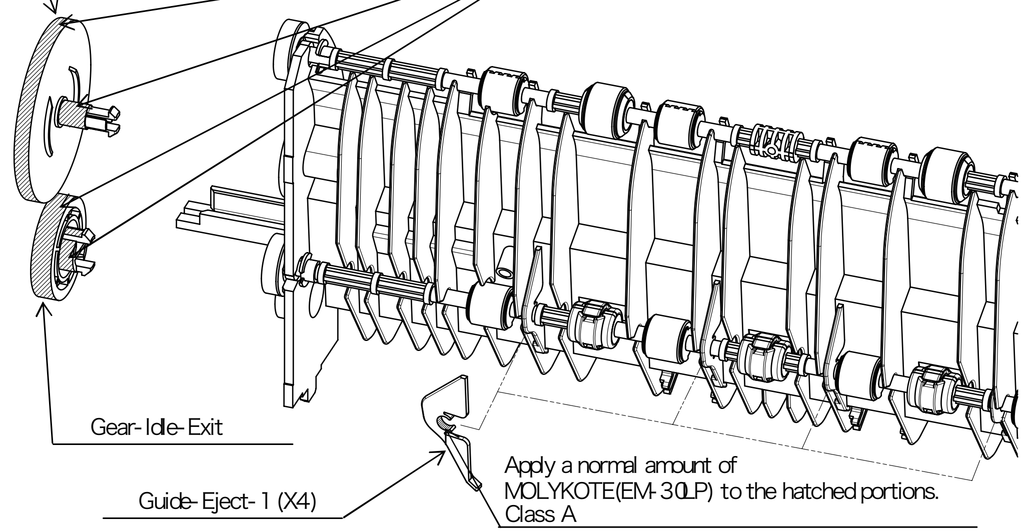
Shaft-Assy.-Eject-(FD)



Apply normal amount of MOLYKOTE(EM-30LP) to the surface of gear of gear teeth, shaft, and the flange portions
Class C

Shaft-Assy.-Eject-(FU)

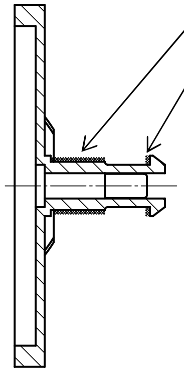
② -3 Guide-Eject-Upper


Gear-Idle-Exit(Z58)
Gear-Idle-Exit
Guide-Eject-1 (X4)

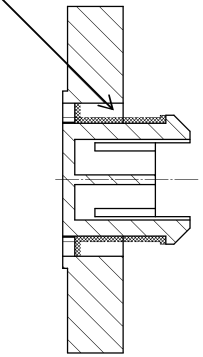
Apply normal amount of MOLYKOTE(EM-30LP) to the surface of the posts and surface of gear teeth.
Class C

Apply a normal amount of MOLYKOTE(EM-30LP) to the hatched portions.
Class A

Apply a normal amount of MOLYKOTE(EM-30LP) to the hatched portions.
Class C

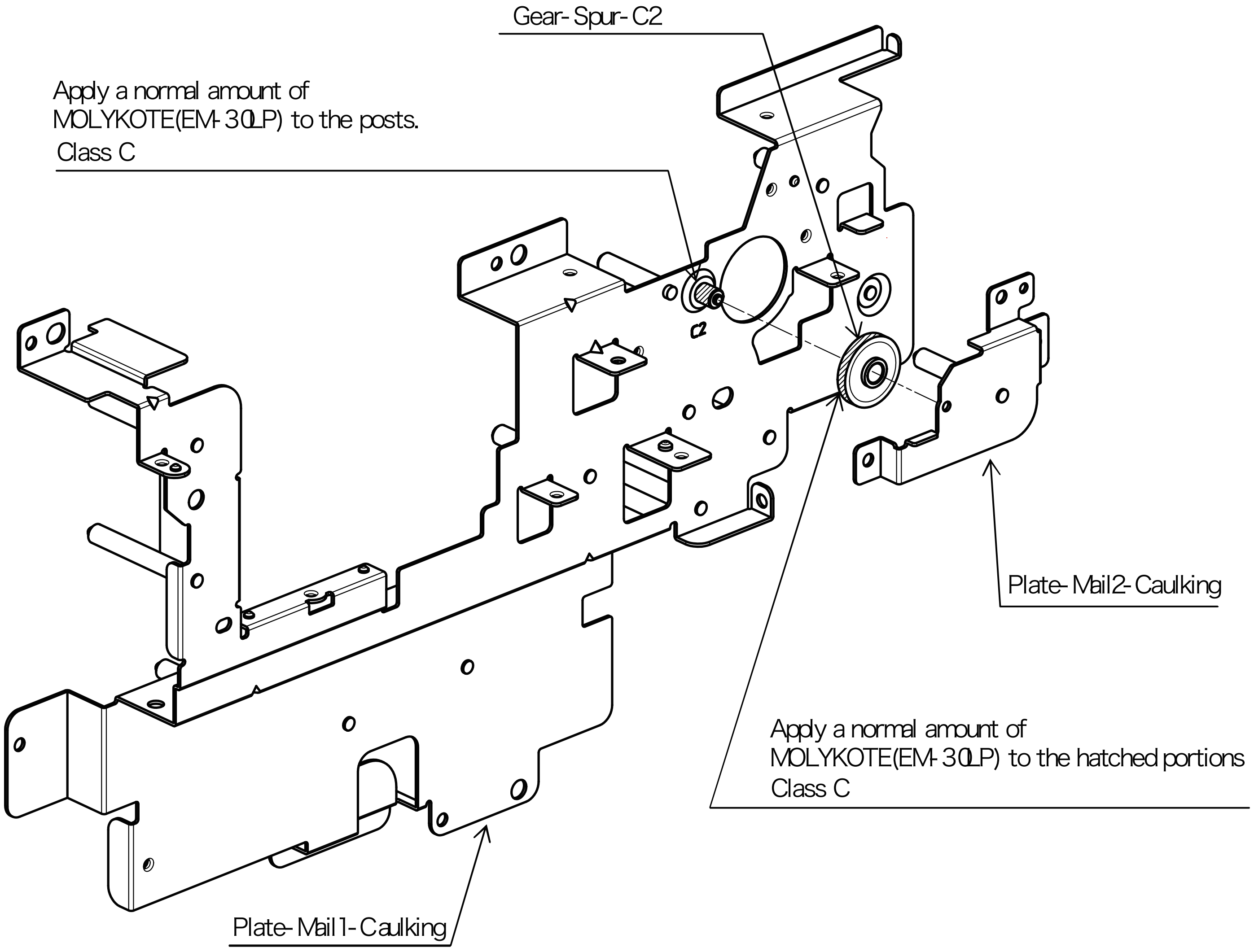


Cross section of Gear-Idle-Exit(Z58)



Cross section of Gear-Idle-Exit

③ -1 Plate-Main-Assy


Gear-Spur-C2
Apply a normal amount of
MOLYKOTE(EM-30LP) to the posts.
Class C
C2
Plate-Mail2-Caulking
Apply a normal amount of
MOLYKOTE(EM-30LP) to the hatched portions
Class C
Plate-Mail1-Caulking

③ -2 Plate-Main-Assy

Apply a small amount of MOLYKOTE(EM-30LP) to
the hatched areas (13 Places)
Class C

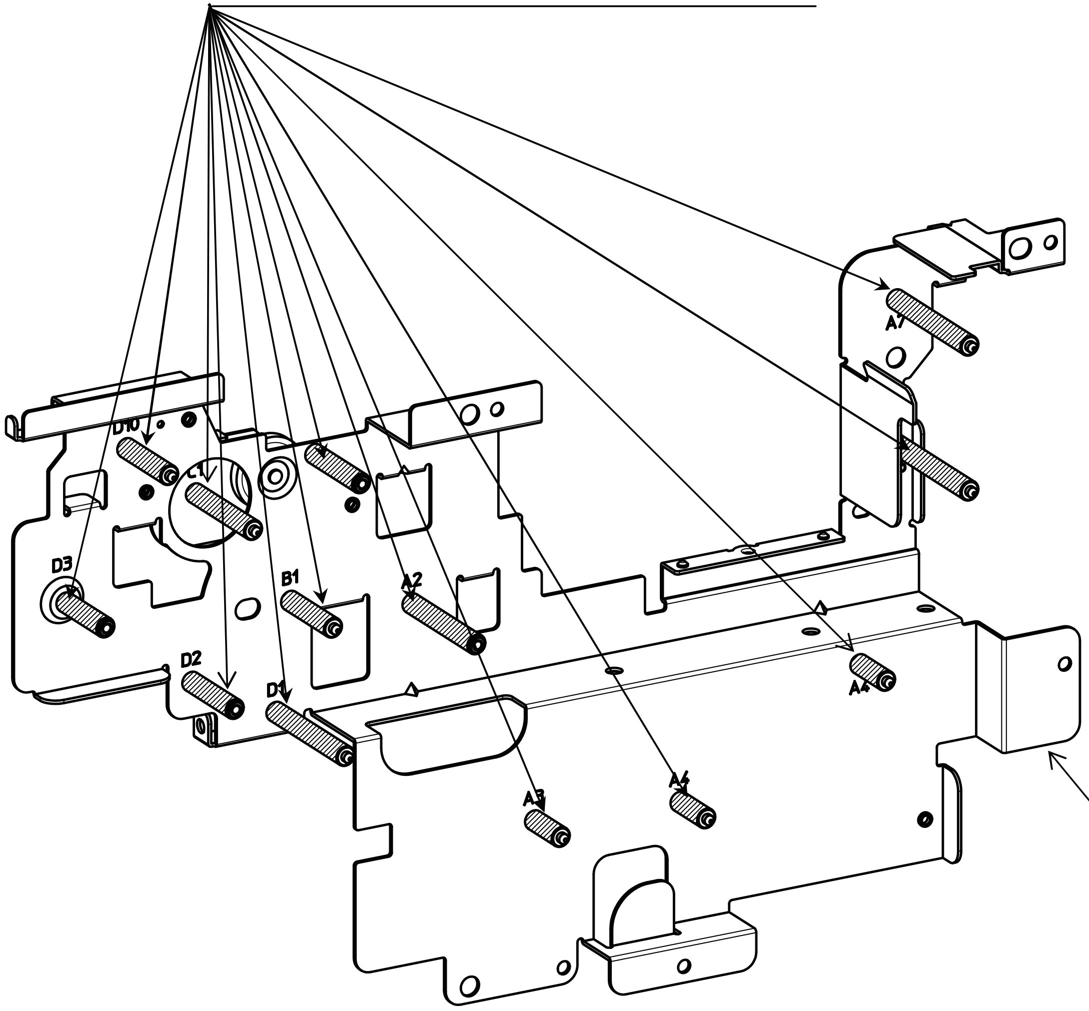

D10
C1
D3
B1
A2
D2
D1
A3
A4
A4
A7

Plate-Mail1-Caulking

③ -3 Plate-Main-Assy

Apply a normal amount of MOLYKOTE(EM-30LP) to the hatched aeras of gear teeth. (7 portions)
Class C

Apply a normal amount of MOLYKOTE(EM-30LP) to the ◌ areas (6 portions)
Class C

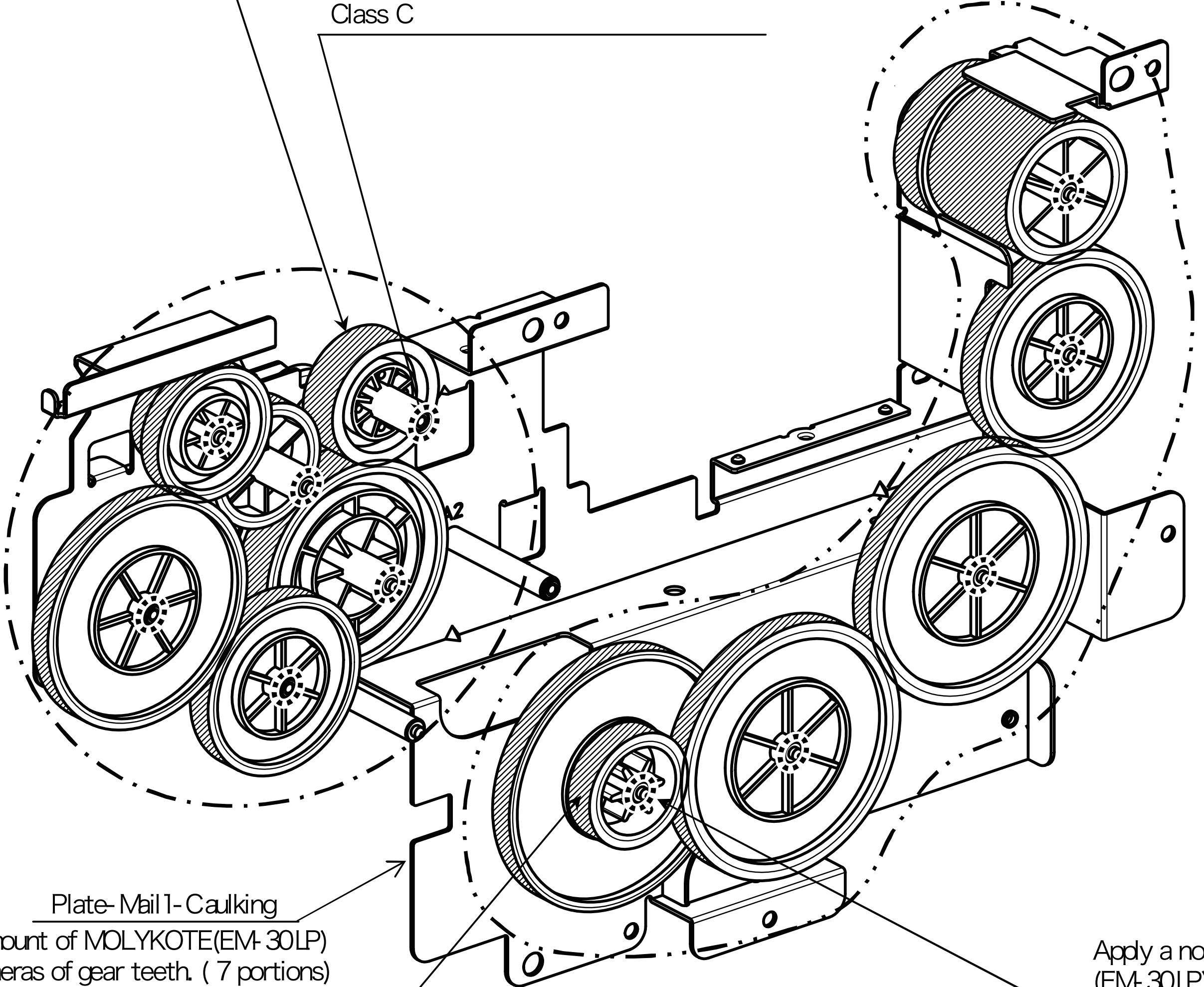
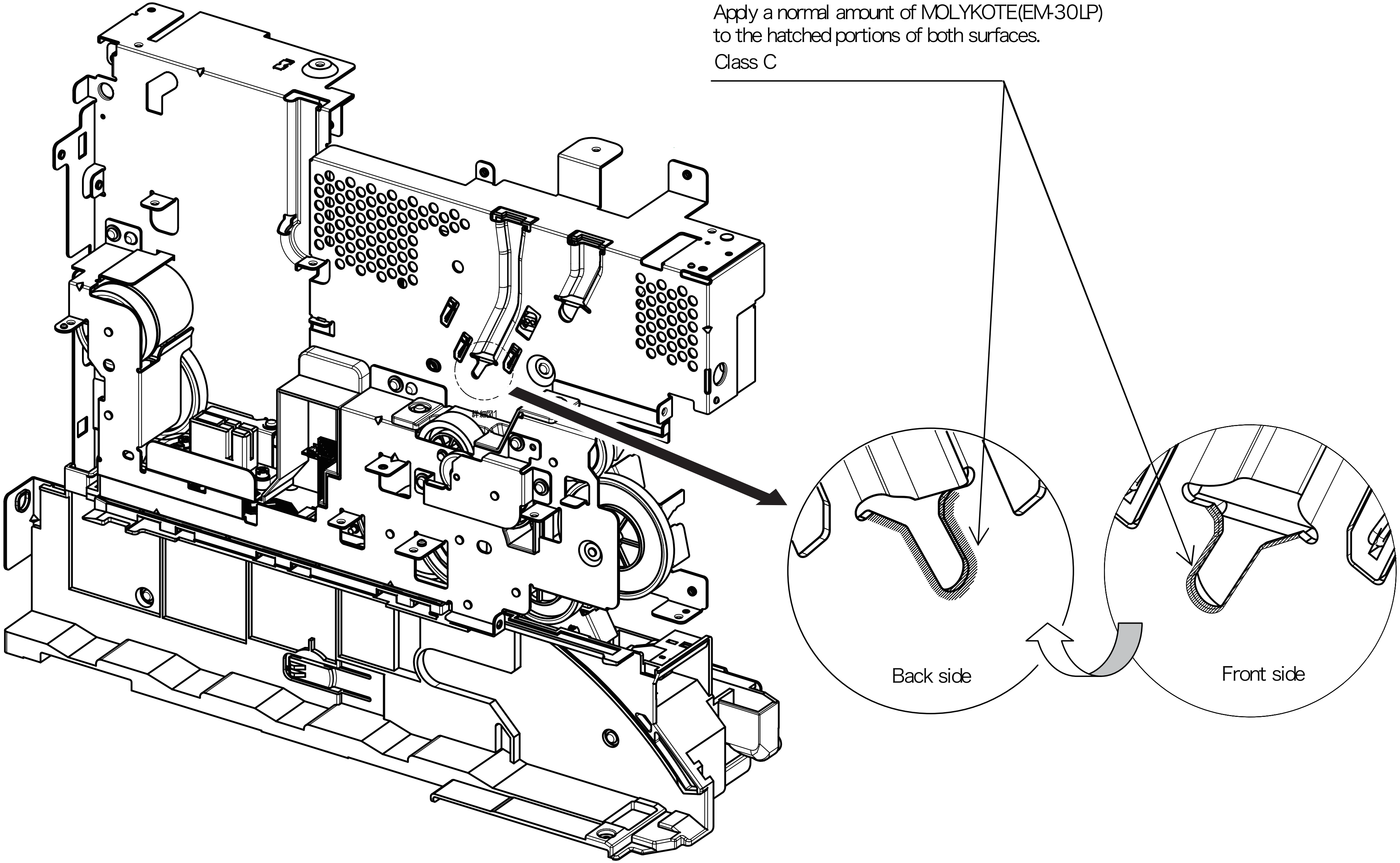


Plate-Mail1-Caulking

Apply a large amount of MOLYKOTE(EM-30LP) to the hatched aeras of gear teeth. (7 portions)
Class C

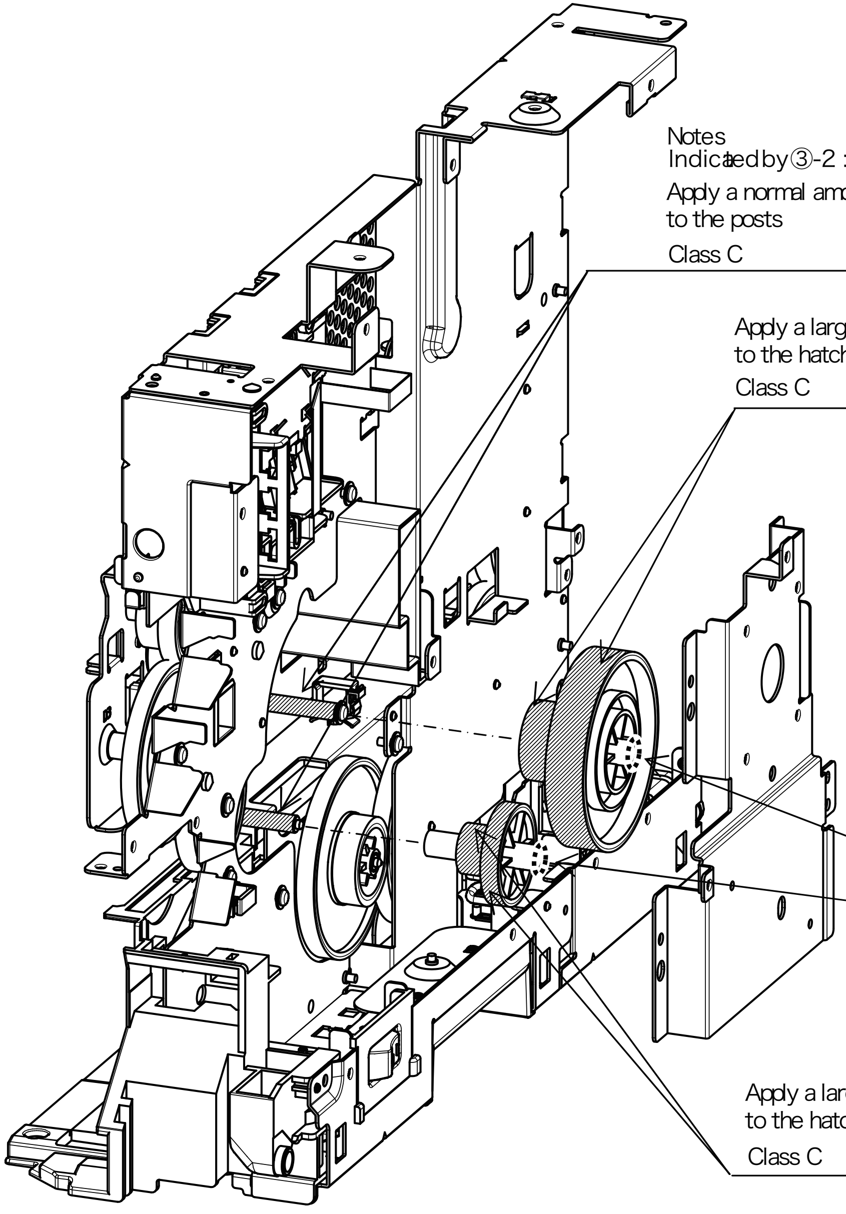
Apply a normal amount of MOLYKOTE (EM-30LP) to the ◌ areas (5 portions)
Class C

④ -1 Plate-Side-R-Assy


Apply a normal amount of MOLYKOTE(EM-30LP)
to the hatched portions of both surfaces.
Class C

詳細図1
Back side
Front side

④ -2 Plate-Side-R-Assy



Notes
Indicated by ③-2 : Plate-Main-Assy

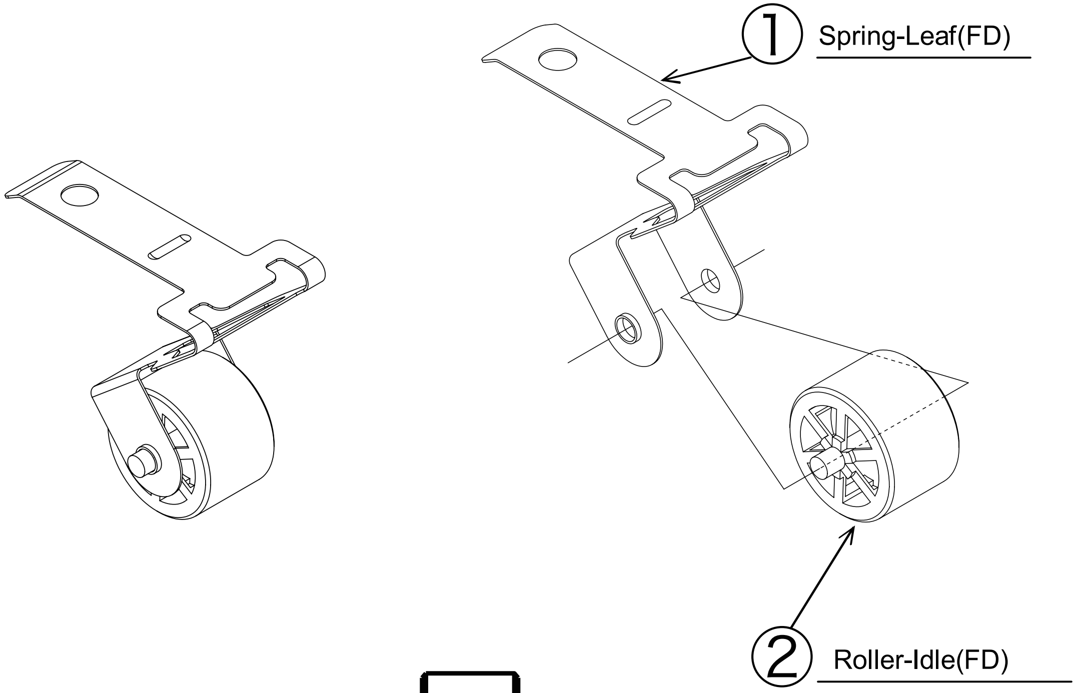
Apply a normal amount of MOLYKOTE(EM-30LP)
to the posts
Class C

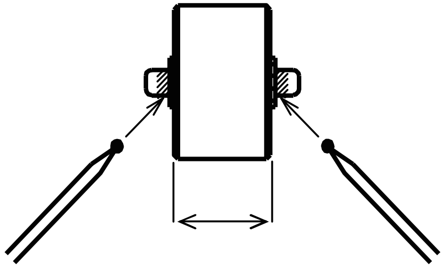
Apply a large amount of MOLYKOTE(EM-30LP)
to the hatched aeras of gear teeth. (2 portions)
Class C

Apply a normal amount of MOLYKOTE(EM-30LP)
to the ◌ areas (2 portions)
Class C

Apply a large amount of MOLYKOTE(EM-30LP)
to the hatched aeras of gear teeth. (2 portions)
Class C

⑤ Roller-Assy-Idle(FD)


① Spring-Leaf(FD)
② Roller-Idle(FD)

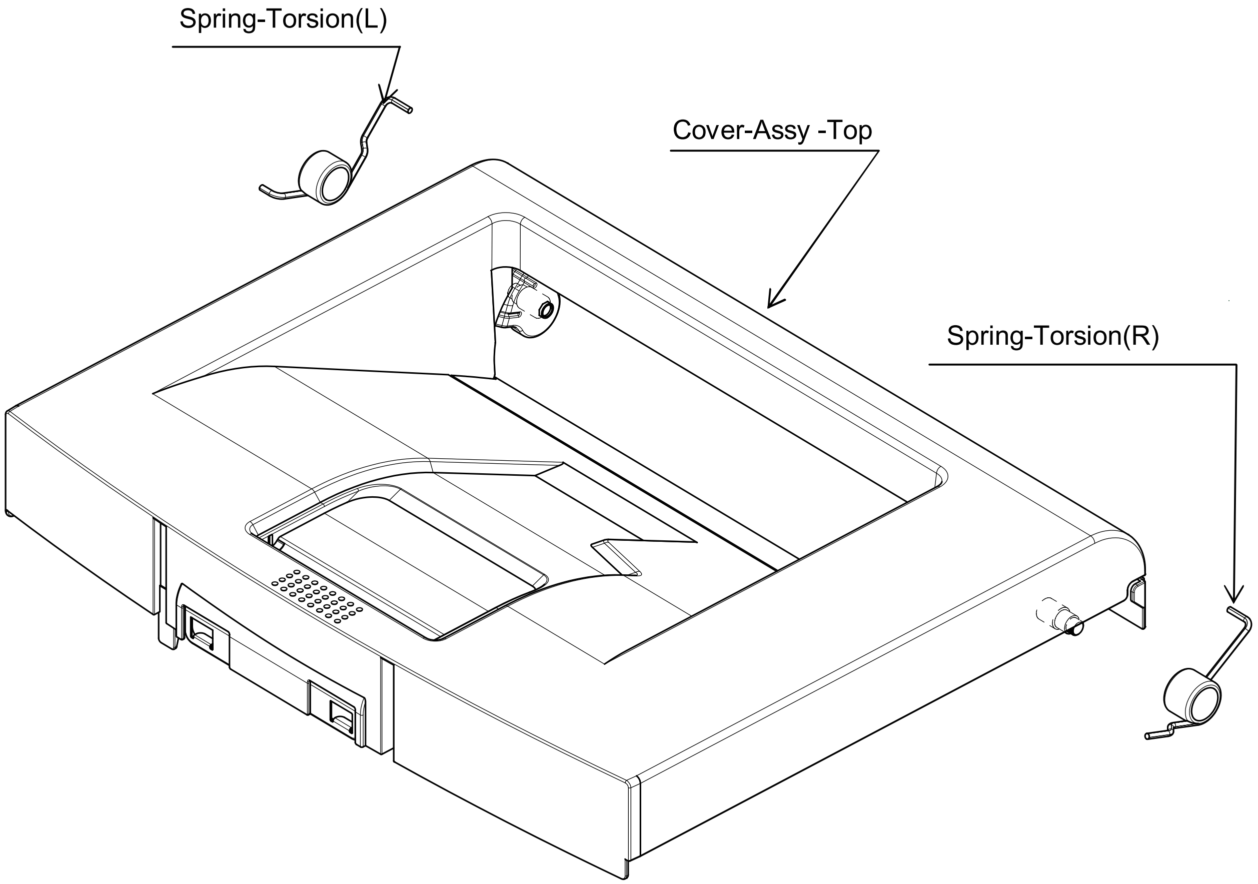


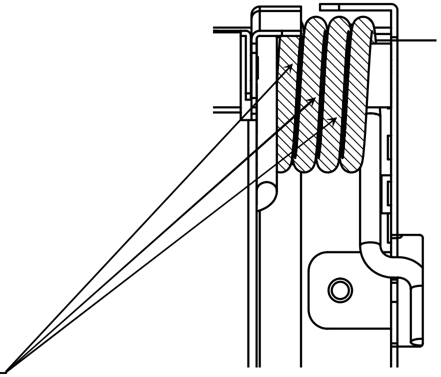
Not allowsd to stain the area with grease.

Method of amount of grease

Before ① assemble at ②, apply small amount of MOLYKOTE(EM-30LP)
to the sliding portins (hatching portions) of ① and ②. (Class S)

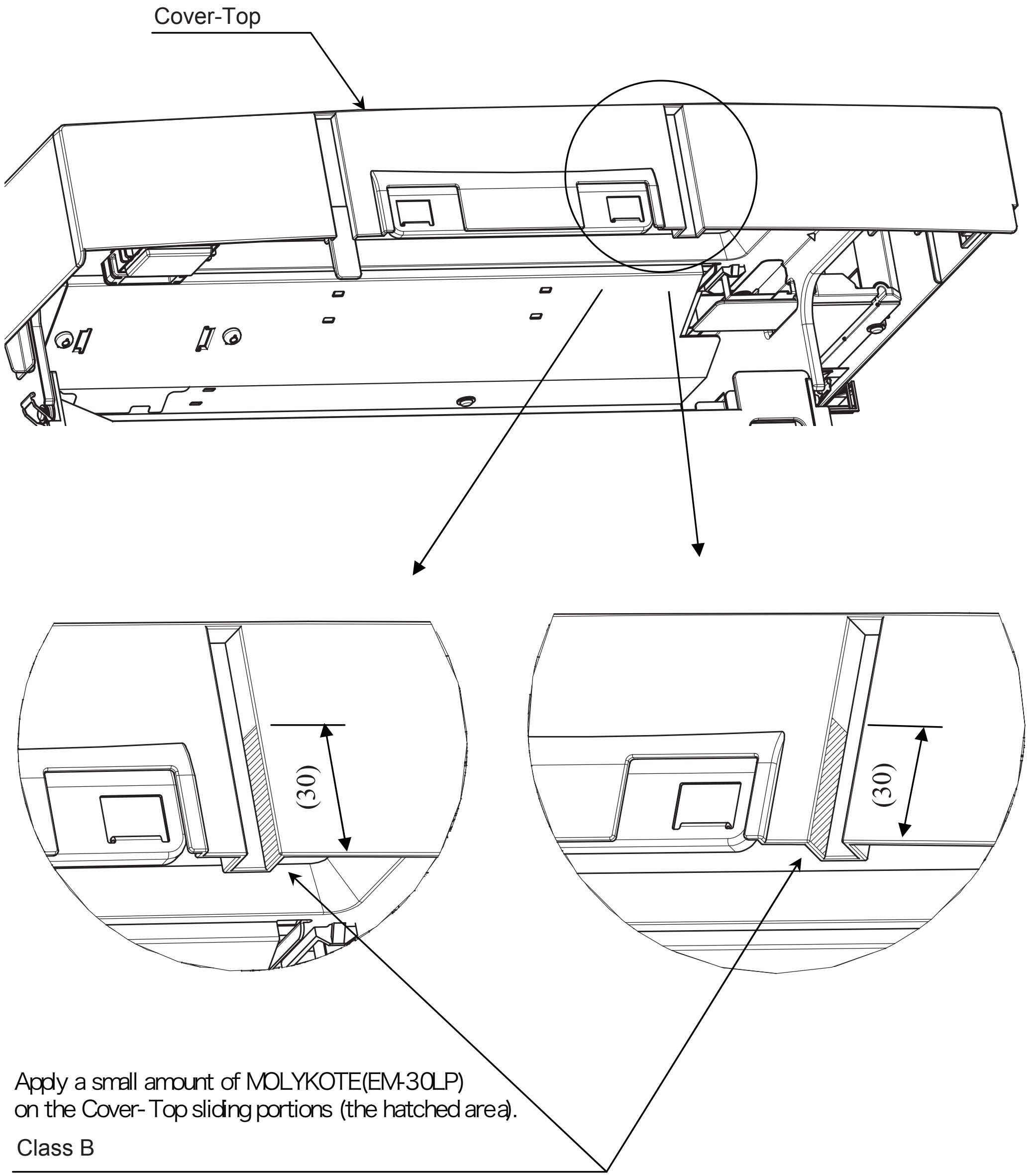
⑥ -1 Top Cover


Spring-Torsion(L)
Cover-Assy -Top
Spring-Torsion(R)



PM is applied to the portion of the slot of solid coiling of this tortion springs using a brush.
(Spring-Torsion-L and Spring-Torsion-R)
Class C

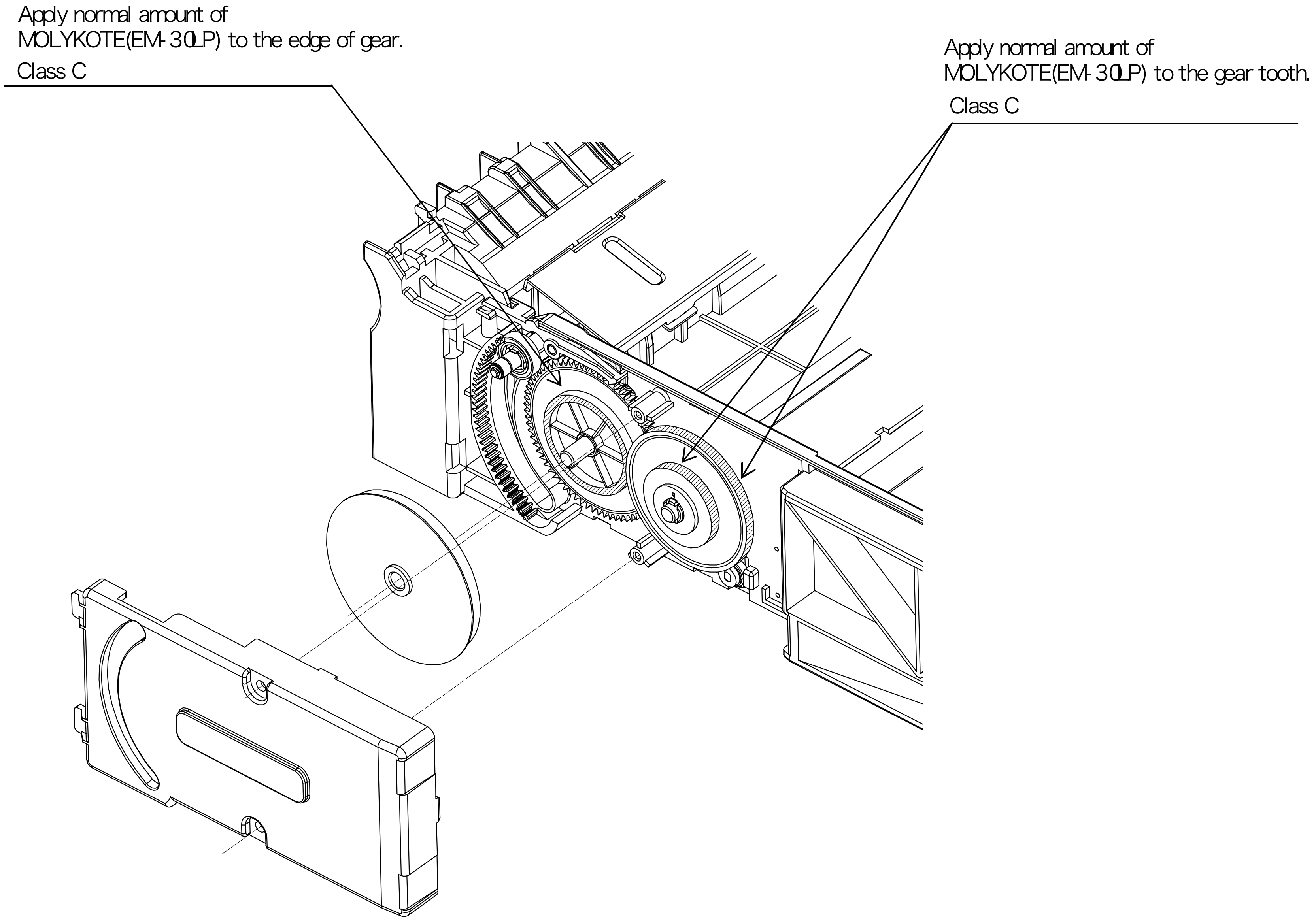
⑥ -2 Top Cover



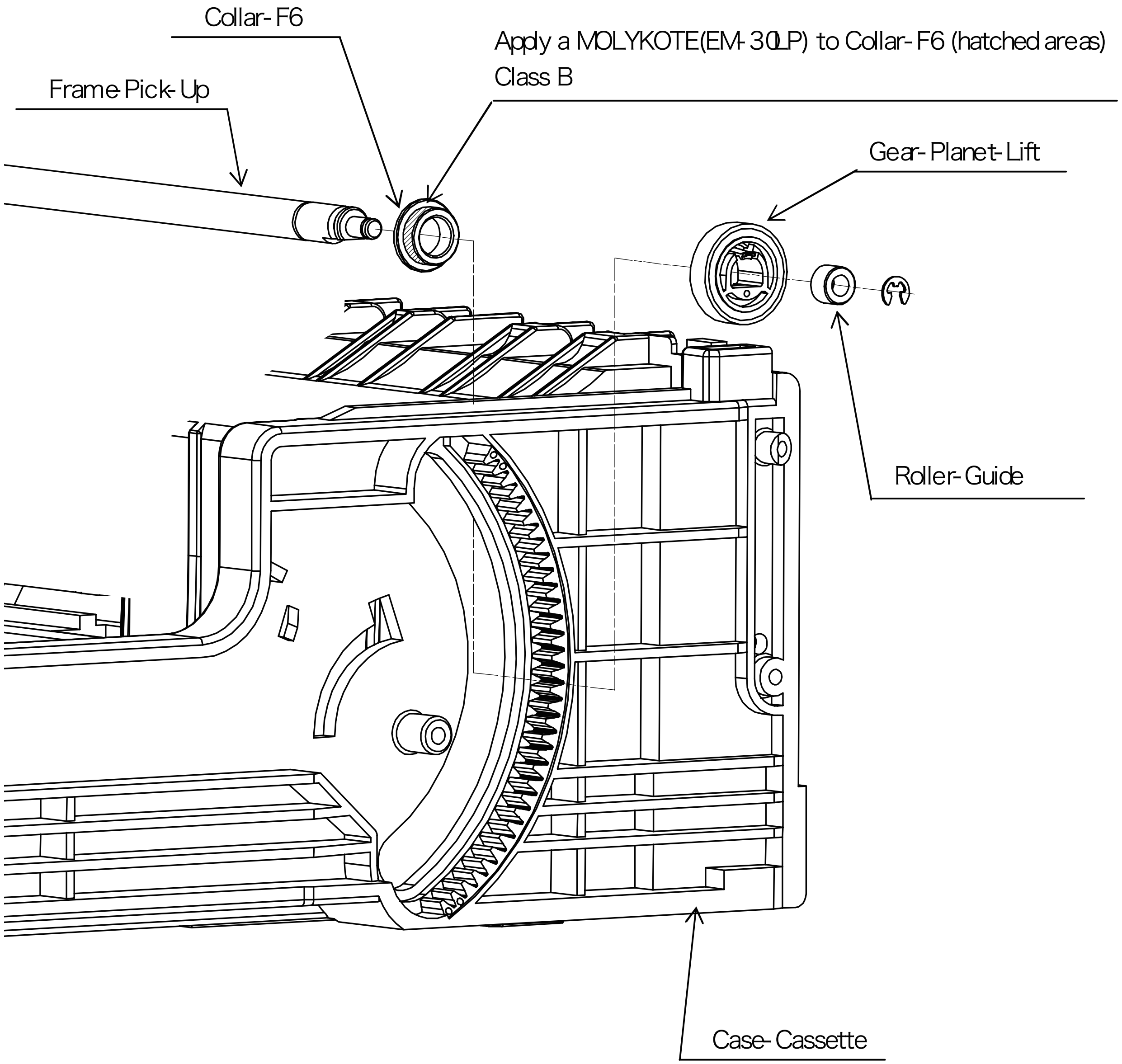
Apply a small amount of MOLYKOTE(EM-30LP)
on the Cover- Top sliding portions (the hatched area).

Class B

⑦ -1 Cassette Assy


Apply normal amount of
MOLYKOTE(EM-30LP) to the edge of gear.
Class C
Apply normal amount of
MOLYKOTE(EM-30LP) to the gear tooth.
Class C

⑦ -2 Cassette Assy


Collar-F6
Apply a MOLYKOTE(EM-30LP) to Collar-F6 (hatched areas)
Class B
Frame-Pick-Up
Gear-Planet-Lift
Roller-Guide
Case-Cassette

⑦ -3 Cassette Assy

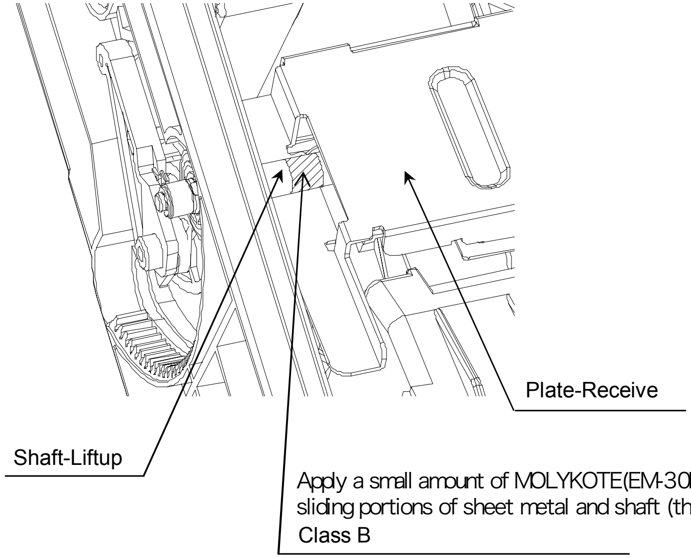
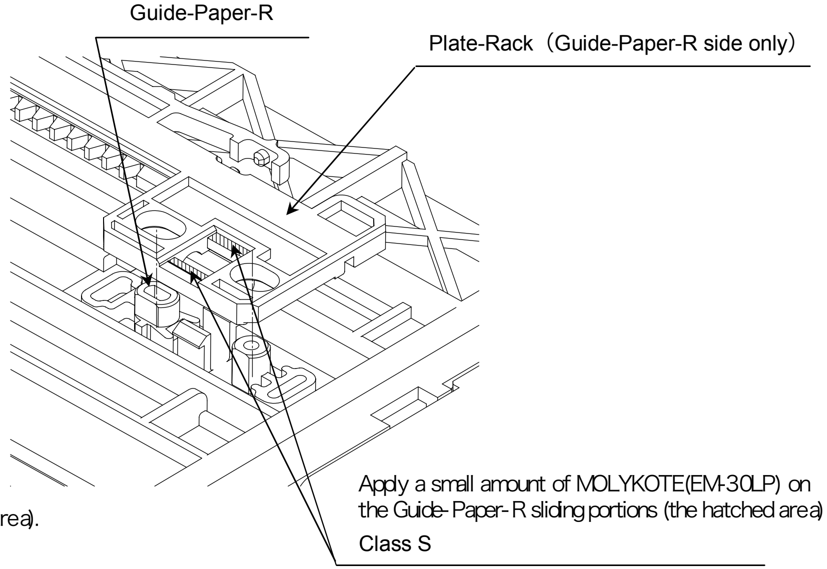


Plate-Receive
Shaft-Liftup

Apply a small amount of MOLYKOTE(EM-30LP) to sliding portions of sheet metal and shaft (the hatched area).
Class B


Guide-Paper-R
Plate-Rack（Guide-Paper-R side only）

Apply a small amount of MOLYKOTE(EM-30LP) on the Guide-Paper-R sliding portions (the hatched area)
Class S

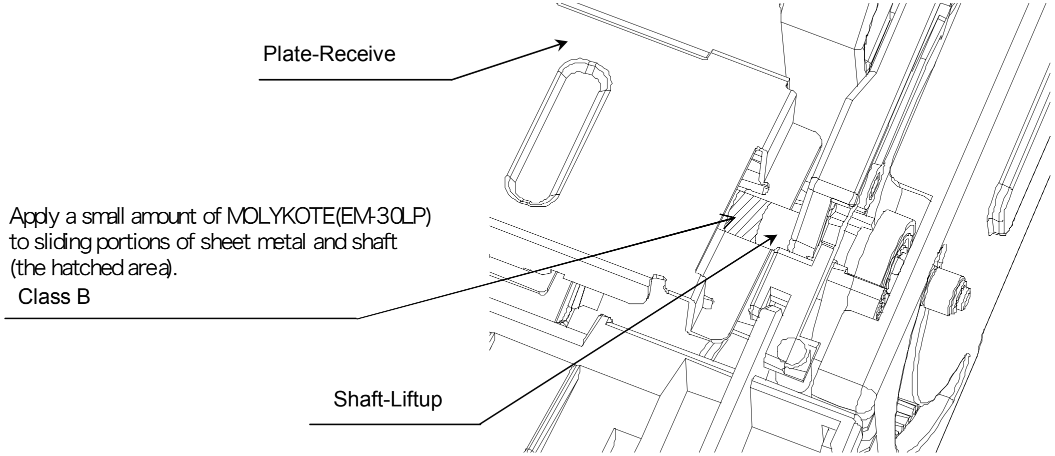


Plate-Receive
Shaft-Liftup

Apply a small amount of MOLYKOTE(EM-30LP) to sliding portions of sheet metal and shaft (the hatched area).
Class B

⑦ -4 Cassette Assy

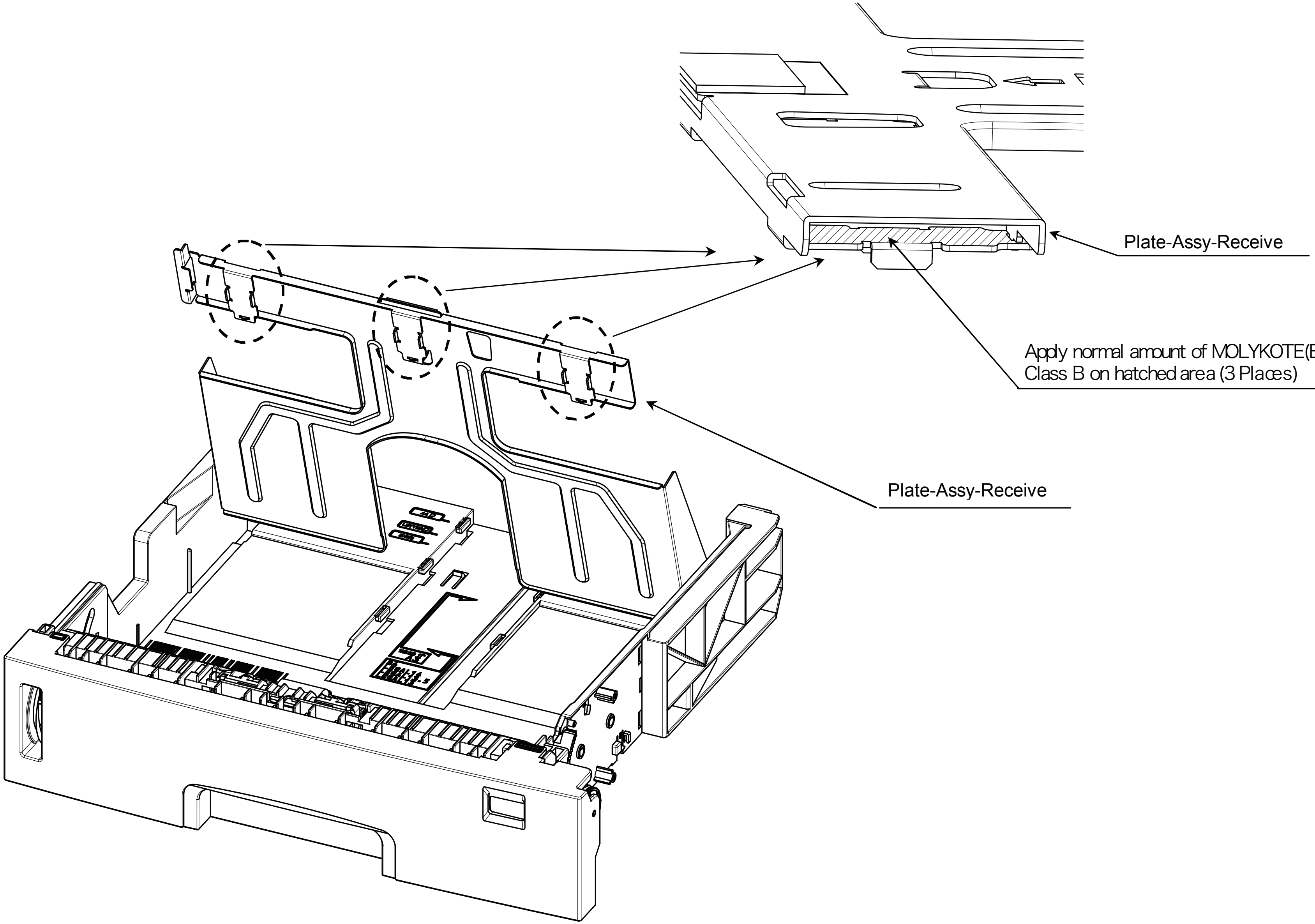
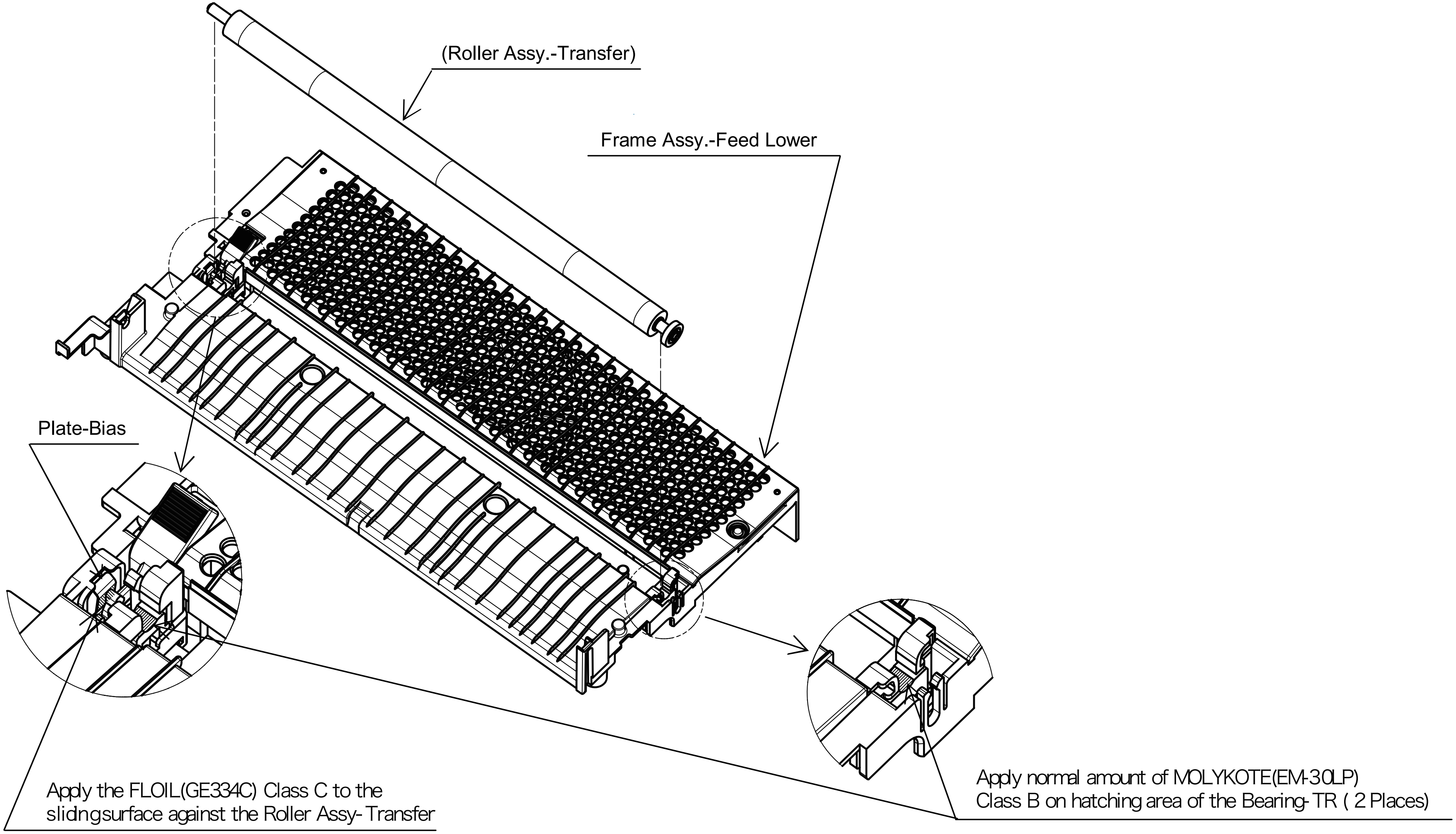


Plate-Assy-Receive
Apply normal amount of MOLYKOTE(EM-30LP)
Class B on hatched area (3 Places)
Plate-Assy-Receive

⑧ Frame Assy-Feed Lower


(Roller Assy.-Transfer)
Frame Assy.-Feed Lower
Plate-Bias

Apply the FLOIL(GE334C) Class C to the slidingsurface against the Roller Assy-Transfer

Apply normal amount of MOLYKOTE(EM-30LP) Class B on hatching area of the Bearing-TR (2 Places)

5. MAINTENANCE MENUS

The adjustment of this printer can be implemented using the maintenance utility and also by key input through the operator panel.

This printer provides maintenance menus, apart from the normal menus. Select the menu that best suits the purpose of your intended adjustment.

5.1 System maintenance menu (For maintenance personnel) 95
5.2 Maintenance utility 97
5.3 Functions of user's maintenance menu 99
5.4 Setup after replacement of parts 115
5.5 Administrator Menu List of the Printer 118

5.1 System maintenance menu (For maintenance personnel)

This menu is activated when the power is turned with the [MENU△] and [MENU▽] buttons held down.

The menu indications are given in English only, irrespective of the destination of the printer.

Note! Since this menu is likely to be changed depending on the destination or for other reason, it is not disclosed to the end users.

Table 5-1 Maintenance menu indication table

Category	Item (1st Line)	Value (2nd Line)	DF	Functions
SYSTEM MAINTE	ENTER PASSWORD	******		Enters a password to enter the system maintenance menu. The number of digits for the password is 6 to 12 digits of figures and small-case alphabets. The default is "000000".
OKIUSER	OKIUSER	ODA OEL APS JP1 JPOEM1 OEMA OEML	*	Used to set the destination. JPOEM1: Japan OEM OEMA: Overseas OEM for A4 default OEML: Overseas OEM for Letter default. When the menu is dismissed, the printer is automatically rebooted. [Display Condition] "SYSTEM MAINTENANCE" - "OKIUSER" should be besides "JPOEM1, OEMA, OEML" or "Manufacturer" should be "OKI DATA CORP".
MAINTE-NANCE MENU				Display condition: The security SD card function is disabled.
	SD CARD FORMAT	EXECUTE	-	Initializes an SD card. When executed, this menu is exited and starts initializing an SD card. Display condition: The printer has the SD card installed on it. "ADMIN MENU"-"FILE SYS MAINTE2"-"INITIAL LOCK" is set to "YES". "ADMIN MENU"-"FILE SYS MAINTE"-"SD" is set to "ENABLE".
MAINTE-NANCE MENU	FLASH FORMAT	EXECUTE	-	Displays the following confirmation message in response to the press of the OK button: ARE YOU SURE? YES/NO NO restores the previous menu display when selected. When selected, YES exits this menu, starting formatting the installed resident (on-board) flash device. * Never use this item.
	MENU RESET	EXECUTE	-	Resets the information in the EEPROM to factory default settings. The printer automatically reboots after change to the default settings. * This does not initialize some special items.
CONFIG MENU	CODESET	TYPE1 TYPE2	*	Displayed for all the destinations of the printer. TYPE1: Disables Russian, Grease and Bulgarian (language file downloading). This value uses English for the operator panel language when the printer already has any of the three languages downloaded. TYPE2: Enables Russian, Grease and Bulgarian. The printer automatically reboots after this menu is exited. The default for this item is TYPE2 when the printer's destination is OEL/APS/OEMA, and TYPE1 when it is not OEL/APS/OEMA.
TEST PRINT MENU	TEST PRINT MENU	ENABLE DISABLE	*	Setting is made here to select either to display or not to display "ENG STATUS IPRINT" under "USER MENU" - "PRINT INFORMATION" category. If this item is set to "DISABLE", "ENG STATUS PRINT" will not be displayed at all. When the menu is dismissed after changing the setting, the printer is restarted.

Category	Item (1st Line)	Value (2nd Line)	DF	Functions
FUSE-KEEP MODE	FUSE KEEP MODE	EXECUTE	-	Pressing the [ENTER] button issues a command from CU to PU, making the printer ONLINE. A consumable part is replaced with a new one with the power switched on and the operation is checked (in this condition, the new consumable fuse is not cut, and the operation count is not added to the value of the old consumable part). Turning off the power terminates the check mode, and the mode becomes invalid next time the power is turned on. Note) If the power is switched off and on with a new consumable part being set, the consumable fuse is cut, and the operation count is reset.
PERSON-ALITY	PCL	ENABLE DISABLE	*	Does not allow USER MENU-SYS CONFIG MENU-PERSONALITY to display PDL languages for which DISABLE is set with this menu. When receiving print data in such languages, the printer displays INVALID DATA, discarding the data. When IBM PPR III XL or EPSON FX is set to ENABLE with the destination set to Japan, proper operation of them is not guaranteed. When ESC/P is set to ENABLE with the destination set to any option outside of Japan, proper operation of it is not guaranteed. B820/B840 printers support IBM 5577 and ESC/P with the destination set to Japan, and IBM PPR and EPSON FX with the destination set to any option outside of Japan.
	IBM PPR III XL	ENABLE DISABLE	*	
	EPSON FX	ENABLE DISABLE	*	
	PS3 EMULATION	ENABLE DISABLE	*	
	PCL XL	ENABLE DISABLE	*	

Category	Item (1st Line)	Value (2nd Line)	DF	Functions
DOTSHIFT	TRAY1	-1.5 MILLIMETER 〜 -0.5 MILLIMETER 0.0 MILLIMETER +0.5 MILLIMETER 〜 +1.5 MILLIMETER	*	Set the dot shift for the horizontal direction when printing from(Tray1/Tray2/Tray3/MPT).It is be adjusted and set in the factory. And it is not be reset as the OKI user change or the EEPROM RESET operation.
	TRAY2			
	TRAY3			
	MPT			
CHANGE PASS-WORD			-	Changes a password. Pressing the [Enter] button for this menu displays "NEW PASSWORD" and "VERIFY PASSWORD, allowing for entry of a new password.
	NEW PASSWORD	****** ******	-	Sets a new password to enter the System Maintenance menu. Six to 12 alphanumeric characters can be entered for this item.
	VERIFY PASSWORD	****** ******	-	Prompts a user to verify and enter again the new password that was set for NEW PASSWORD to enter the System Maintenance menu. Six to 12 alphanumeric characters can be entered for this item.
ENGINE DIAG MODE			-	Activates the self-diagnostic mode of the engine.

Operations of the switches and LCD indications produced during the self-diagnostic mode are different from the specifications for operation of the printer.

See 5.3.2 Self-diagnostic mode.

5.2 Maintenance utility

The adjustments described in table 5-2 should be made by using Maintenance Utility.

The following details the utility:

(1) Maintenance Utility Operating Manuals:
42678801FU01 Ver. 28 or higher (Japanese)
42678801FU02 Ver. 28 or higher (English)

(2) Maintenance Utility program:

Applicable operating system	File name	Part number
Win 2000/ XP/ Vista/ 7 (Japanese/ English)	MuWin.zip	42678801FW01 Ver. 1.30.0 or higher

Table 5-2: Adjustment options in Maintenance Utility

	Option	Adjustment	Section in Maintenance Utility Operating Manual	Operation from operator panel (section in this maintenance manual)
1	Board replacement	Copies information in the EEPROM in the PU block, and the settings in the EEPROM in the CU block. Purpose: To copy the above data onto a CU/PU board with which to replace the CU/PU board for a maintenance purpose.	2.4.1.1.9	Unavailable
2	Serial number setting	Rewrites the serial number recorded in the PU block and selects and rewrites the printer serial number recorded in the CU block and rewrites the output mode recorded in it. Purpose: To configure a maintenance replacement CU/PU board onto which the CU/PU board information cannot be copied with the board replacement function (e.g. due to an interface error).	2.4.1.1.6.3	Unavailable
3	Factory/ Shipping mode	Switches between the Factory and Shipping modes. Purpose: To configure a maintenance replacement CU/PU board onto which the CU/PU board information cannot be copied with the board replacement function (e.g. due to an interface error). The maintenance board is put to the Factory mode usually by default and, by using this function, must be set to the Shipping mode.	2.4.1.1.6.4	5.3.2.8
4	Board option setup information	Checks serial number information and the Factory/Shipping mode.	2.4.1.1.7	Unavailable
5	USB software update	Updates the USB software.	2.4.2.2.1	Unavailable
6	NIC software update	Updates the NIC software.	2.4.2.2.17	Unavailable
7	MAC address setting	Sets the MAC address.	2.4.2.2.5	Unavailable
8	Consumable counter maintenance function	Copies the consumable counters: Image drum counters (Y, M, C and K) Fuser counter Belt counter Toner counters (Y, M, C and K) Purpose: To copy the counter value of each consumable in use in the printer to use in another printer.	2.4.1.2.14	Unavailable
9	Destination/ PnP information setup	Sets and checks the printer's (CU) destination, device identification and USB identification.	2.4.1.2.9	For destinations, see OKIUSER in Subsection 5.1. The other items are not operable.
10	Sending of a specified file	Sends a specified file.	2.4.1.2.13	Unavailable

	Option	Adjustment	Section in Maintenance Utility Operating Manual	Operation from operator panel (section in this maintenance manual)
11	Forced formatting of Flash	Forced formatting of Flash	2.4.2.2.8	5.1 FLASH FORMAT
12	Password initialization	Initializes a Password.	2.4.2.2.13	Unavailable
13	Network log storage function	Stores a network log file.	2.4.2.2.14	Unavailable
14	FUSE KEEP mode	Switching to FUSE KEEP mode	2.4.2.2.12	5.1 FUSE KEEP MODE
15	PU log file storage function	Stores a PU log file	2.4.2.2.16	Unavailable
16	Consumable counter display	Checks the current consumable counter values.	2.4.1.3.1	3.6 Printing of the MENU MAP
17	Menu setting check	Displays the menu settings set on the printer (CU).	2.4.1.3.2	3.6 Printing of the MENU MAP
18	Printer information check	Checks the MAC address and each firmware version.	2.4.1.3.3	3.6 Printing of the MENU MAP
19	CPU and Memory value check	Checks the information on the printer's installed (CU) CPU and memory.	2.4.1.3.4	3.6 Printing of the MENU MAP
20	Test print	Executes the local print function and sends a specified file. Purpose: To check the printer for operation it performs solely and send a download file.	2.4.1.4.1	See Subsection 3.6 for Menu Map printing. For the other items, perform local printing (refer to System Specification).

	Option	Adjustment	Section in Maintenance Utility Operating Manual	Operation from operator panel (section in this maintenance manual)
21	Switch scan test	Executes the switch scan test. Purpose: To check each sensor for operation.	2.4.1.5.1	5.3.2.3
22	Motor clutch test	Executes the motor clutch test. Purpose: To check each item, such as a motor or clutch, for operation.	2.4.1.5.2	5.3.2.4
23	Counter display	Checks the consumable, continuous consumable and waste toner counters.	2.4.1.5.6	5.3.2.6 5.3.2.7
24	Local parameter setting	Switches between the Factory and Shipping modes and checks the status of the fuse.	2.4.1.5.7	5.3.2.8
25	Engine parameter setting	Makes an engine parameter setting.	2.4.1.5.8	5.3.2.9 Setup of self-dianostic function
26	Media transfer parameter setting	Makes a print media transfer parameter setting.	2.4.1.5.9	5.3.2.9 Setup of self-dianostic function

5.3 Functions of user's maintenance menu

5.3.1 Maintenance menu (For end users)

There is a maintenance menu category among the normal menu categories. (Different from the system maintenance menus)

The items that can be set under this menu are indicated below.

Maintenance Menu

Item	Value	Default	Function / Notes
MENU RESET	EXECUTE	-	Resets EEPROM of CU. Resets User menu to the factory default. If Execute is selected, It exits from the menu after the “COMPLETE” character is displayed.
SAVE MENU	EXECUTE	-	Stores currently-made menu settings. This option stores menu settings made when it is last executed, and overwrites with them those it stored before that. The option displays the following confirmation message when the [Enter] button is pressed: ARE YOU SURE? YES/NO NO restores the previous menu display when selected. When selected, YES stores the currently-made menu settings, exiting this menu.
RESTORE MENU	EXECUTE	-	Restores stored menu settings. The option displays the following confirmation message when the [Enter] button is pressed: ARE YOU SURE? YES/NO NO restores the previous menu display when selected. When selected, YES restores the stored menu settings, exiting this menu. * The option is not executed while the printer has print data.
POWER SAVE	ENABLE DISABLE	*	Sets whether to enable or disable the Power Save mode. The time to establish the power saving mode when ENABLE is selected can be changed with "SYS CONFIG MENU" - "POW SAVE TIME".
SLEEP	ENABLE DISABLE	*	Sets whether to enable or disable the Sleep mode. The time to establish the mode when ENABLE is selected can be changed with "SYS CONFIG MENU" - "SLEEP TIME".
USB HOST POWER	OFF ON	*	Set enable/disable of USB Power Save OFF:Power Save Mode ON: Normal Power Mode
PAPER BLACK SET	0 +1 +2 +3 -3 -2 -1	*	Use it for fine adjustment of the significant dust attachment on the surface and when thin spot has the sighificant impact on the standard/BLACK printing or other cases occur. Decrease the setting when such specks or snow flake-like print occurs in a high-density print area. Increase the setting when faded print occurs.
TRNSPR BLACK SET	0 +1 +2 +3 -3 -2 -1	*	Use it for fine adjustment of the significant dust attachment on the surface and when thin spot has the significant impact on the OHP/BLACK printing or other cases occur. Decrease the setting when such specks or snow flake-like print occurs in a high-density print area. Increase the setting when faded print occurs.
DARKNESS	0 +1 +2 +3 -3 -2 -1	*	Sets print darkness. (It is possible to change by "1" unit.)
SMR SETTING	-3 -2 -1 0 +1 +2 +3	*	To correct variations in print results caused by temperature/humility conditions and difference in print density/frequency. Change the setting when print quality is uneven.
BG SETTING	-3 -2 -1 0 +1 +2 +3	*	To correct variations in print results caused by temperature/humility conditions and difference in print density/frequency. Change the setting when background is dark.

5.3.2 Self-diagnostic mode

(1) To enter Self-diagnostic mode, turn on the power switch while holding down the [MENU△] and [MENU▽] buttons and then select "ENGINE DIAG MODE" .

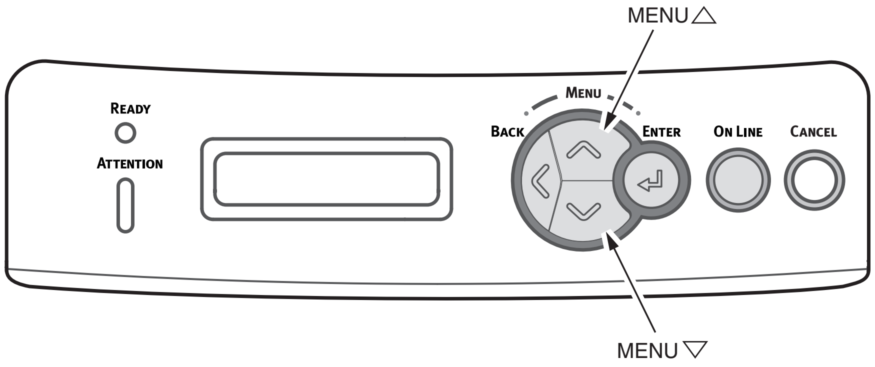
(2) The function of this mode is selected from Menu.

(3) The release method of this mode is different by setting.

(4) Self-diagnostic mode (LEVEL0 and LEVEL1) provides the followings.

5.3.2.1 Operator panel

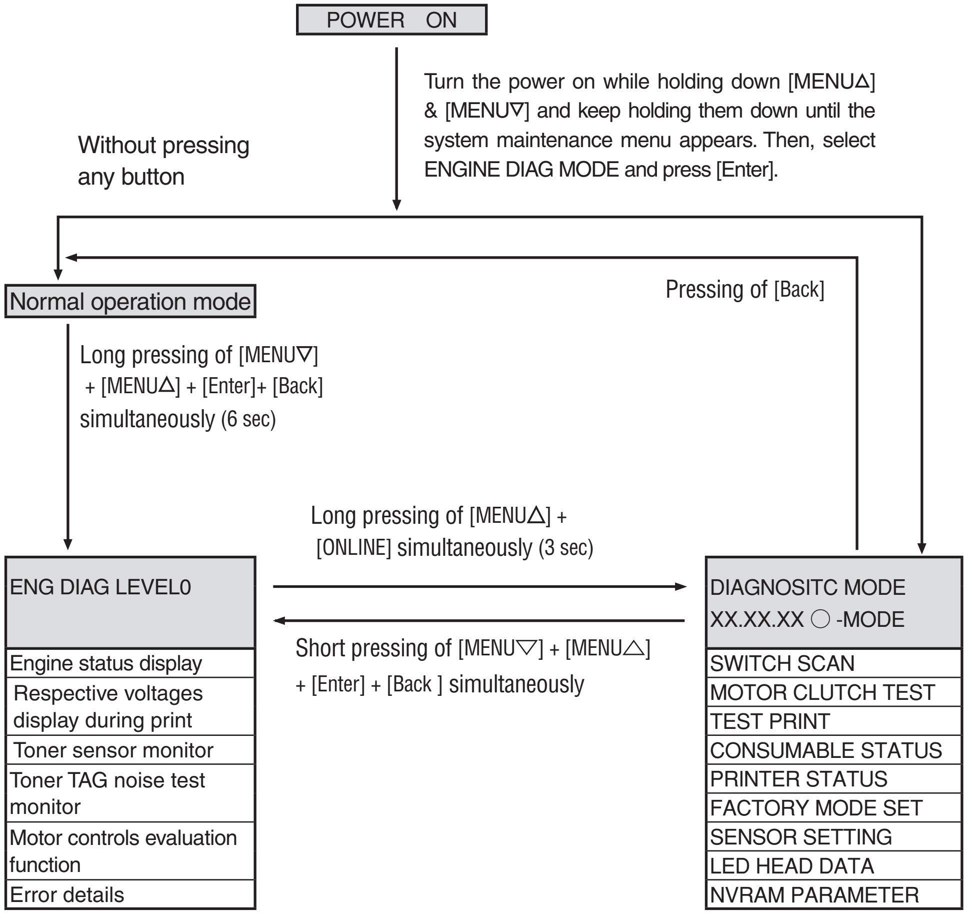
The following description on operating the self-diagnostic is premised on the operation panel layout as shown below.


MENU△
READY
ATTENTION
MENU
BACK
ENTER
ON LINE
CANCEL
MENU ▽

Self-diagnostic mode layout (overall)

(1) How to select the menu items

XXXXX	Menu items can be selected directly.
XXXXX	Menu items can be selected by pressing either [MENU△] or [MENU▽] button.

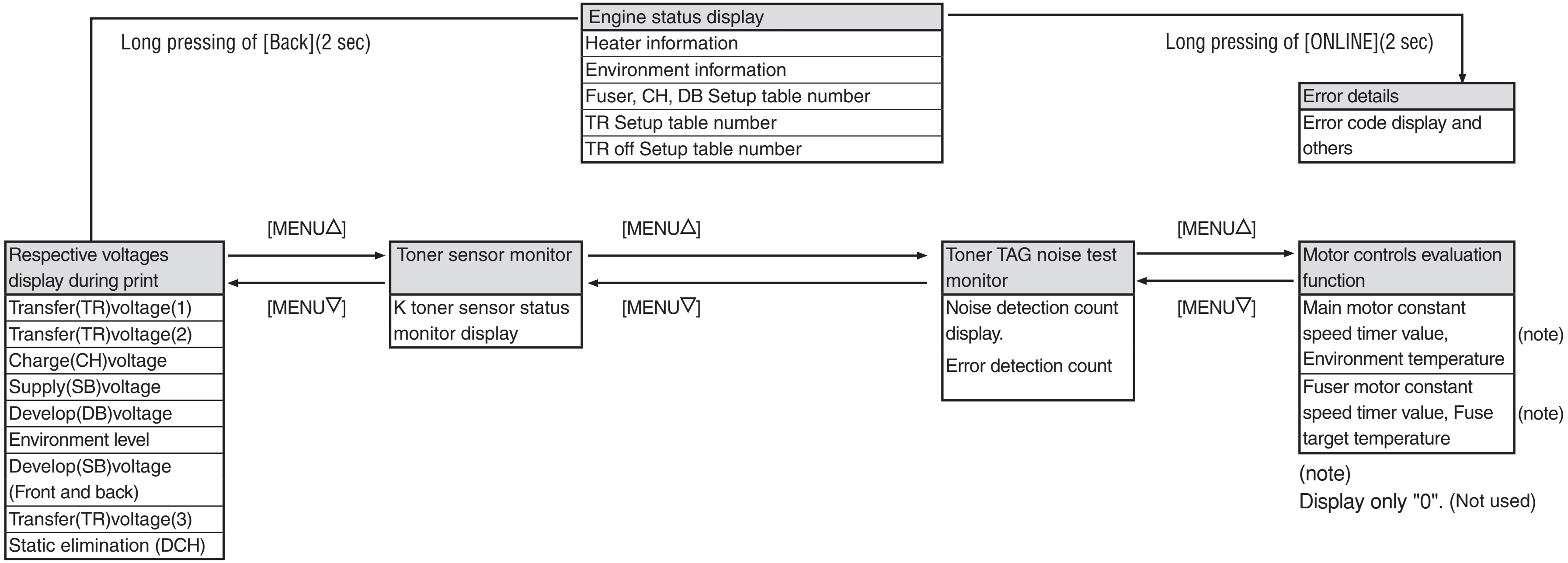

POWER ON
Turn the power on while holding down [MENU△] & [MENU▽] and keep holding them down until the system maintenance menu appears. Then, select ENGINE DIAG MODE and press [Enter].
Without pressing any button
Normal operation mode
Pressing of [Back]
Long pressing of [MENU▽] + [MENU△] + [Enter]+ [Back] simultaneously (6 sec)
Long pressing of [MENU△] + [ONLINE] simultaneously (3 sec)
Short pressing of [MENU▽] + [MENU△] + [Enter] + [Back] simultaneously
ENG DIAG LEVEL0
Engine status display
Respective voltages display during print
Toner sensor monitor
Toner TAG noise test monitor
Motor controls evaluation function
Error details
DIAGNOSITC MODE
XX.XX.XX ○ -MODE
SWITCH SCAN
MOTOR CLUTCH TEST
TEST PRINT
CONSUMABLE STATUS
PRINTER STATUS
FACTORY MODE SET
SENSOR SETTING
LED HEAD DATA
NVRAM PARAMETER

LEVEL0

(1) How to select the menu items

XXXX Menu items can be selected by long pressing of [Back] or [ONLINE], or by short pressing of [MENU△] or [MENU▽].

XXXX Menu items can be entered by pressing of [Enter] or [Back], and can be selected by pressing of [MENU△] or [MENU▽].


Engine status display
Heater information
Environment information
Fuser, CH, DB Setup table number
TR Setup table number
TR off Setup table number
Long pressing of [Back](2 sec)
Long pressing of [ONLINE](2 sec)
Error details
Error code display and others
Respective voltages display during print
Transfer(TR)voltage(1)
Transfer(TR)voltage(2)
Charge(CH)voltage
Supply(SB)voltage
Develop(DB)voltage
Environment level
Develop(SB)voltage (Front and back)
Transfer(TR)voltage(3)
Static elimination (DCH)
[MENU△]
[MENU▽]
Toner sensor monitor
K toner sensor status monitor display
[MENU△]
[MENU▽]
Toner TAG noise test monitor
Noise detection count display.
Error detection count
[MENU△]
[MENU▽]
Motor controls evaluation function
Main motor constant speed timer value, Environment temperature
(note)
Fuser motor constant speed timer value, Fuse target temperature
(note)

(note)
Display only "0". (Not used)

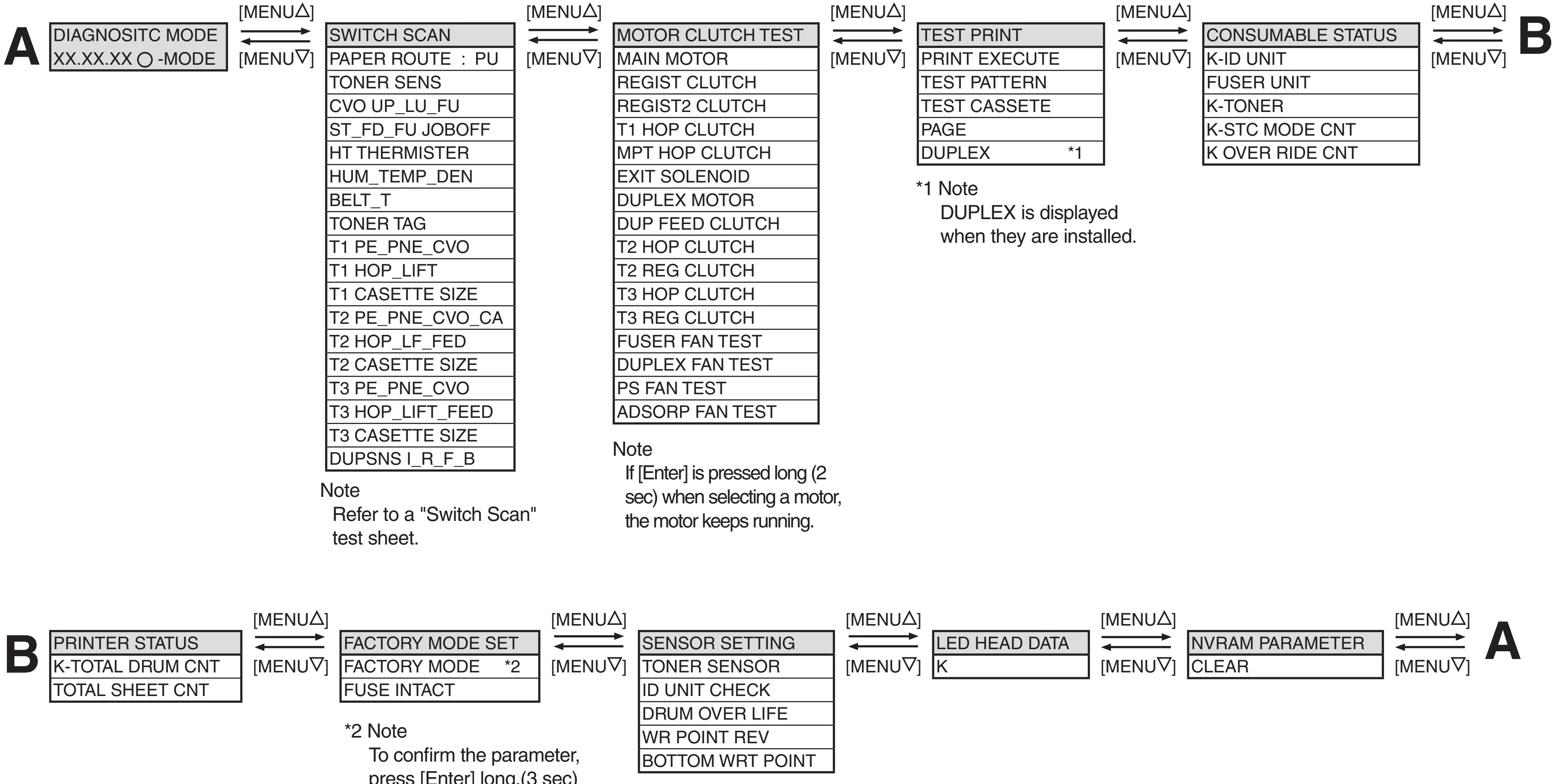
LEVEL1

(1) How to select the menu items

XXXXX Menu items can be selected by pressing either [MENU△] or [MENU▽] button, and executed by pressing [Enter].

XXXXX Menu items can be entered by pressing of [Enter] or [Back], and can be selected by pressing of [MENU△] or [MENU▽].

The test can be executed by pressing [Enter], and can be exited by pressing [Back].


A
DIAGNOSITC MODE
XX.XX.XX ○ -MODE
[MENU△]
[MENU▽]
SWITCH SCAN
PAPER ROUTE : PU
TONER SENS
CVO UP_LU_FU
ST_FD_FU JOBOFF
HT THERMISTER
HUM_TEMP_DEN
BELT_T
TONER TAG
T1 PE_PNE_CVO
T1 HOP_LIFT
T1 CASETTE SIZE
T2 PE_PNE_CVO_CA
T2 HOP_LF_FED
T2 CASETTE SIZE
T3 PE_PNE_CVO
T3 HOP_LIFT_FEED
T3 CASETTE SIZE
DUPSNS I_R_F_B
[MENU△]
[MENU▽]
MOTOR CLUTCH TEST
MAIN MOTOR
REGIST CLUTCH
REGIST2 CLUTCH
T1 HOP CLUTCH
MPT HOP CLUTCH
EXIT SOLENOID
DUPLEX MOTOR
DUP FEED CLUTCH
T2 HOP CLUTCH
T2 REG CLUTCH
T3 HOP CLUTCH
T3 REG CLUTCH
FUSER FAN TEST
DUPLEX FAN TEST
PS FAN TEST
ADSORP FAN TEST
[MENU△]
[MENU▽]
TEST PRINT
PRINT EXECUTE
TEST PATTERN
TEST CASSETE
PAGE
DUPLEX *1
[MENU△]
[MENU▽]
CONSUMABLE STATUS
K-ID UNIT
FUSER UNIT
K-TONER
K-STC MODE CNT
K OVER RIDE CNT
[MENU△]
[MENU▽]
B
B
PRINTER STATUS
K-TOTAL DRUM CNT
TOTAL SHEET CNT
[MENU△]
[MENU▽]
FACTORY MODE SET
FACTORY MODE *2
FUSE INTACT
[MENU△]
[MENU▽]
SENSOR SETTING
TONER SENSOR
ID UNIT CHECK
DRUM OVER LIFE
WR POINT REV
BOTTOM WRT POINT
[MENU△]
[MENU▽]
LED HEAD DATA
K
[MENU△]
[MENU▽]
NVRAM PARAMETER
CLEAR
[MENU△]
[MENU▽]
A

Note
Refer to a "Switch Scan" test sheet.

Note
If [Enter] is pressed long (2 sec) when selecting a motor, the motor keeps running.

*1 Note
DUPLEX is displayed when they are installed.

*2 Note
To confirm the parameter, press [Enter] long.(3 sec)

Note
To confirm the parameter, press [Enter] long.(3 sec)

5.3.2.2 Normal self-diagnostic mode (Level 1)

The menus of the normal self-diagnostic mode are indicated below.

	Item	Self-diagnostic menu	Adjustment contents	Maintenance utilities
1	Switch scan test	SWITCH SCAN	Entry sensor check and switch check	No.21
2	Motor clutch test	MOTOR & CLTCH TEST	Motor and clutch operation test	No.22
3	Test print execution	TEST PRINT	PU built-in test pattern print	Not operable
6	Consumable item counter display	CONSUMABLE STATUS	Consumable items consumption status display	No.23
7	Consumable item accumulative counter display	PRINTER STATUS	Consumable items accumulative consumption status display	No.23
8	Factory/ Shipping mode selection	FACTORY MODE SET	Switching between the Factory mode and the Shipping mode	No.3 No.24
9	FUSE status check		Respective FUSEs status display	No.24
10	Engine parameter setting	SENSOR SETTING	Valid/Invalid setups of error detection by various sensors	No.25
11	LED HEAD check	LED HEAD DATA	LED HEAD serial number display	Not operable
12	NVRAM parameter setting	NVRAM PARAMETER	Do not use this item	Not operable

5.3.2.2.1 Activation method for self-diagnostic mode (Level 1)

1. While pressing the [MENU△] and [MENU▽] keys simultaneously, turn on the power to enter the system maintenance mode.
2. Press the [MENU△] key or [MENU▽] key several times until the message "ENGINE DIAG MODE" is displayed. Then, press the [Enter] key to display "DIAGNOSTIC MODE".

```
DIAGNOSTICMODE
XX.XX.XX  FACTORY/SHIPPING
```

3. XXX.XX.XX of the message "DIAGNOSTIC MODE XX.XX.XX" that is displayed on the LCD display area indicates the PU firmware version number. The FACTORY WORKING MODE setup value is displayed in the right of the lower row. S-MODE of "SHIPPING" is displayed normally.
4. Press the [MENU△] key or [MENU▽] key to advance to the desired step of each self-diagnostic menu. (The menu items rotate when either the [MENU △] key or [MENU▽] key is pressed.)

5.3.2.2.2 Deactivation of self-diagnostic mode

1. Turn off the power once and back on 10 seconds later.

5.3.2.3 Switch scan test

This self-diagnostic menu is used to check the entry sensor and the switch.

1. Enter the self-diagnostic mode (level 1), press the [MENU△] or [MENU▽] key repeatedly ,and press the [Enter] key when the "SWITCH SCAN" is displayed in the upper row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)

```
SWITCH SCAN

```

2. Press either the [MENU△] or [MENU▽] key until the desired menu item corresponding to the unit to be tested in Figure 5-1 is displayed in the lower row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)
3. Pressing the [Enter] key starts the test. Name and present status of the corresponding unit are displayed.

```
PAPER ROTE:PU
1=H 2=L 3=H 4=L
```

   Activate the respective units. (Figure 5-1) Status of the respective units are displayed on the corresponding areas of the LCD display. (Display changes depending on each sensor. Refer to Table 5-3 for details.)

4. Press the [CANCEL] key to return to the status of step 2.
5. Repeat steps 2 to 4 as required.
6. Press the [Back] key to exit the test. (Returns to the status of step 1.)

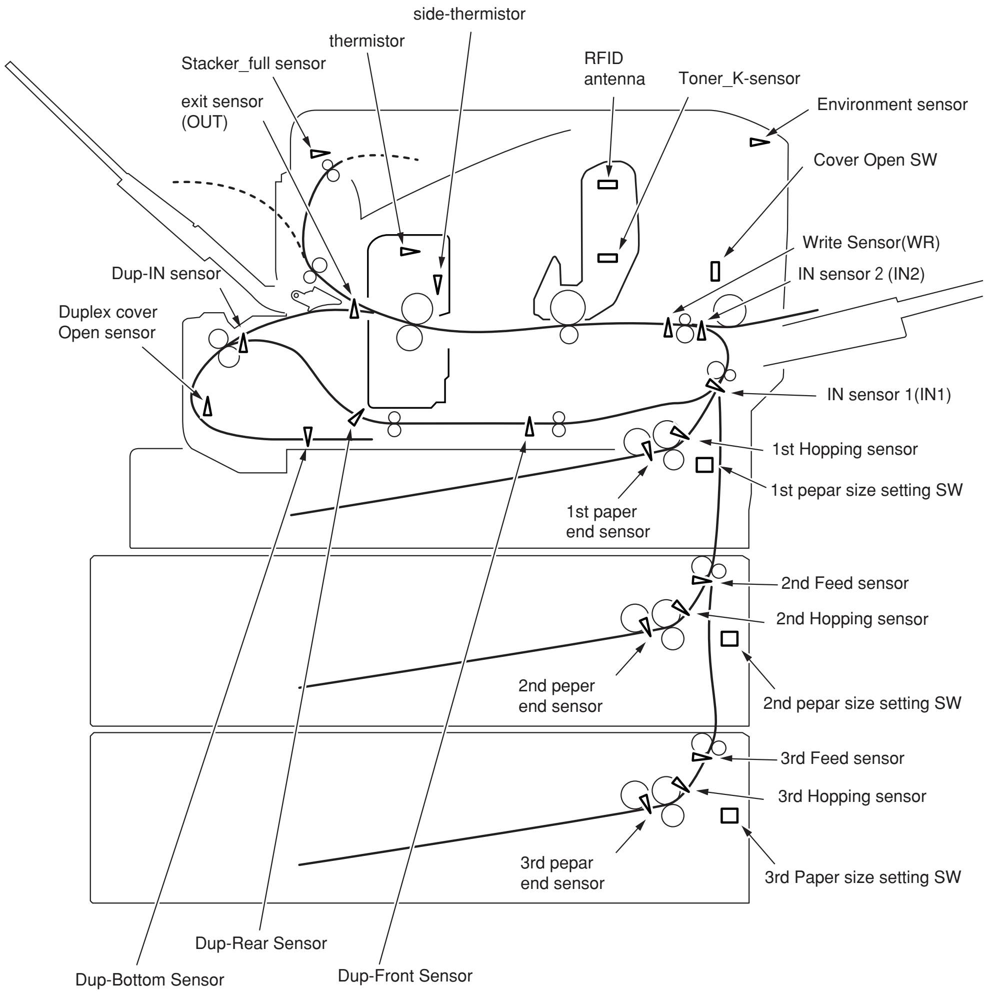

side-thermistor
thermistor
Stacker_full sensor
exit sensor
(OUT)
RFID
antenna
Toner_K-sensor
Environment sensor
Cover Open SW
Write Sensor(WR)
IN sensor 2 (IN2)
Dup-IN sensor
Duplex cover
Open sensor
IN sensor 1(IN1)
1st Hopping sensor
1st pepar size setting SW
1st paper
end sensor
2nd Feed sensor
2nd Hopping sensor
2nd peper
end sensor
2nd pepar size setting SW
3rd Feed sensor
3rd Hopping sensor
3rd pepar
end sensor
3rd Paper size setting SW
Dup-Rear Sensor
Dup-Bottom Sensor
Dup-Front Sensor

Figure 5-1 Switch sensor position

Table 5-3 SWITCH SCAN Display Detail

No	Upper Display	Lower display	Detail	Remarks
0	PAPER ROUTE : PU	1=H or L	Entrance Cassette Sns(IN1)	H : OFF L : ON
		2=H or L	Entrance-FF Sns(IN2)	
		3=H or L	Entrance Belt Sns(WR)	
		4=H or L	Exit Sns(OUT)	
2	TONER SENS	1=H or L	Toner-K Sns	H : OFF L : ON
3	CVO UP_LU_FU	1=H or L	Cover-Upper	H : CLOSE L : OPEN
4	ST_FD_FU JOBOFF	1=H or L	Stacker Full Sns(Face down)	H : EMPTY L : FULL
6	HT THERMISTER	1=xxx	Upper-Center-Thermister	AD value ***H
		3=xxx	Upper-Side-Thermister	
		4=xxx	UpperCompensateTemp-Thermister	
7	HUM_TEMP_DEN	1=xxx	Hum Sns	AD value ***H
		2=xxx	Temperture-Sns	
8	BELT_T	1=xxx	Belt-Thermister	AD value ***H
10	TONER TAG	1=xxx	TAG-K presence or absence	UID ***H TAG Not installed : N
17	T1 PE_PNE_CVO	1=H or L	1st-Paper-End Sns	Port level H/L
18	T1 HOP_LIFT	1=H or L	1st-Hopping Sns	Port level H/L
19	T1 CASETTE SIZE	1=H or L	1st-PaperSize-1 Sw	Port level H/L *1
		2=H or L	1st-PaperSize-2 Sw	
		3=H or L	1st-PaperSize-3 Sw	
		4=H or L	1st-PaperSize-4 Sw	
20	T2 PE_PNE_CVO_CA	1=H or L	2nd-Paper-End Sns	Port level H/L
21	T2 HOP_LF_FED	1=H or L	2nd-Hopping Sns	Port level H/L
		3=H or L	2nd-Feed Sns	
22	T2 CASETTE SIZE	1=H or L	2nd-PaperSize-1 Sw	Port level H/L *1
		2=H or L	2nd-PaperSize-2 Sw	
		3=H or L	2nd-PaperSize-3 Sw	
		4=H or L	2nd-PaperSize-4 Sw	
23	T3 PE_PNE_CVO	1=H or L	3rd-Paper-End Sns	Port level H/L
24	T3 HOP_LIFT_FEED	1=H or L	3rd-Hopping Sns	Port level H/L
		3=H or L	3rd-Feed Sns	
25	T3 CASETTE SIZE	1=H or L	3rd-PaperSize-1 Sw	Port level H/L *1
		2=H or L	3rd-PaperSize-2 Sw	
		3=H or L	3rd-PaperSize-3 Sw	
		4=H or L	3rd-PaperSize-4 Sw	
32	DUPSNS I_R_F_B	1=H or L	Dup-In Sns	Port level H/L
		2=H or L	Dup-Rear Sns	
		3=H or L	Dup-Front Sns	
		4=H or L	Dup-Bottom Sns	

*1 Refer to paper size to Bit correspondence table

Paper size to Bit correspondence table

TRAY	Lower display				Paper size
	1	2	3	4	
T1 CASETTE SIZE T2 CASETTE SIZE T3 CASETTE SIZE	H	H	H	H	No cassett
	L	L	L	L	A4 LEF
	H	H	L	L	OTHER
	L	H	L	L	A5 SEF
	L	H	H	L	LETTER LEF
	H	H	H	L	LEGAL
	H	L	H	L	B5 LEF
	H	L	H	H	B4
	L	L	L	H	A4 SEF
	L	L	H	L	A3
	L	L	H	H	Reserved
	L	H	L	H	Reserved
	H	H	L	H	Reserved
	H	L	L	H	Reserved
	L	H	H	H	Reserved
	H	L	L	L	Reserved

5.3.2.4 Motor clutch test

This self-diagnosis is practiced to test motors and clutches.

1. Enter the self-diagnostic mode (level 1), press the [MENU△] or [MENU▽] key repeatedly ,and press the [Enter] key when the "MOTOR & CLUTCH TEST" is displayed in the upper row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)
2. Press either the [MENU△] or [MENU▽] key until the desired menu item corresponding to the unit to be tested in Table 5-4 is displayed in the lower row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)

```
MOTOR & CLUTCH TEST
MAIN MOTOR
```

3. Pressing the [Enter] key starts the test. The unit name starts flashing and the corresponding unit is activated for 10 seconds. (Refer to Figure 5-2.)

Note!

After the corresponding unit has activated for 10 seconds, it returns to the status of step2, and is re-activated when the corresponding switch is pressed.

- The clutch solenoid repeats turning on and off during the normal print drive.(If a clutch solenoid cannot be activated independently, the motor is driven at the same time.)
- If [Enter] key is pressed long (2 sec) when selecting a motor, the motor keeps running.

4. When the [CANCEL] key is pressed, the corresponding unit stops activating. (Display of the corresponding unit keeps displayed.)
5. Repeat steps 2 to 4 as required.
6. Pressing the [Back] key terminates the test. (Returns to the status of step 1.)

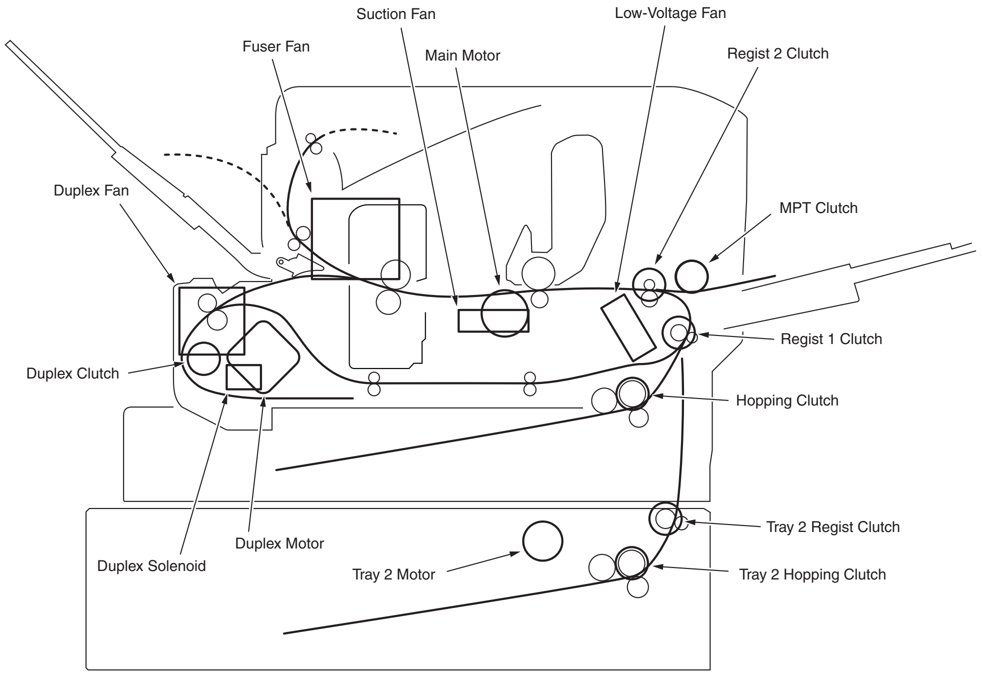

Suction Fan
Low-Voltage Fan
Fuser Fan
Main Motor
Regist 2 Clutch
Duplex Fan
MPT Clutch
Regist 1 Clutch
Duplex Clutch
Hopping Clutch
Tray 2 Regist Clutch
Duplex Motor
Duplex Solenoid
Tray 2 Motor
Tray 2 Hopping Clutch

Figure 5-2

Table 5-4

Unit Name	Remarks
MAIN MOTOR	–
REGIST CLUTCH	*1
REGIST2 CLUTCH	*1
T1 HOP CLUTCH	*1
MPT HOP CLUTCH	*1
EXIT SOLENOID	–
DUPLEX MOTOR	OPTION
DUP FEED CLUTCH	OPTION
T2 HOP CLUTCH	OPTION
T2 REG CLUTCH	OPTION
T3 HOP CLUTCH	OPTION
T3 REG CLUTCH	OPTION
FUSER FAN TEST	–
DUPLEX FAN TEST	OPTION
PS FAN TEST	–
ADSORT FAN TEST	–

*1 : The main motor drives in tests.

5.3.2.5 Test print

This self-diagnosis is practiced to print test patterns built in PU. Other test patterns are stored in the controller.

This print cannot be used to check the print quality.

To diagnose abnormal images, follow Section 7.

1. Enter the self-diagnostic mode (level 1), press the [MENU△] or [MENU ▽] key repeatedly ,and press the [Enter] key when the "TEST PRINT" is displayed in the upper row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)
2. The setting items that can be applied to the test print only is displayed in the lower row of display area. Keep pressing the [MENU△], [MENU▽] key until the desired menu item is displayed. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.) (If all setting items need no entry [Default setting], go to step 5.)
3. Keep pressing the [MENU△], [MENU▽] key, and press the [Enter] key at the menu item set by step 2. Then, the setting item is displayed in the upper row of display area, and the setting value is displayed in the lower row of display area.

   Pressing the [MENU△] key increments the setting value. Pressing the [MENU▽] key decrements the setting value. (The setting value that is displayed at last is applied.) Pressing the [Back] key determines the entry value, and returns to step 2. Repeat step 3 as required.

```
TEST PATTERN
1
```

Display	Setting value	Function
PRINT EXECUTE	–	Pressing the [OK] key starts print/Pressing the CANCEL key terminates print. (In units of page)
TEST PATTERN	0	0 : White paper print 1 : 2 x 2 pattern 2 : 4 x 4 pattern 3 : Horizontal line pattern 4 : Diagonal line pattern 5 : Vertical line pattern 6 : Vertical band pattern 7 : Solid-fill pattern 8~15: White paper print
TEST CASSETTE	TRAY1	Selecting source of paper supply. If the TRAY2 is not installed, TRAY2 is not displayed. If the TRAY3 is not installed, TRAY3 is not displayed.
	TRAY2	
	TRAY3	
	MPT	
PAGE	0000	Setting number of the test print copies
DUPLEX	2 PAGES STACK	Selecting OFF for duplex (2-sided) print. Duplex (1-sided) print is performed by the stack of one sheet of paper.
	OFF	
	1 PAGES STACK	

- ▨ is the initial default value. The menu item that is set here is valid in this menu item only.
  (The setting item is not saved in EEPROM.)

Note!

PAGE setting

Pressing the [MENU△] key or the [MENU▽] key shifts the digit. Pressing the [ONLINE] key increments the setting value. Pressing the [MENU△] key increments the setting value. If print is executed while the number of print copies remains in "0000", printing will continue infinitely.

4. While the message "PRINT EXECUTE" that is set by the operation specified in step 2 is being displayed, press the [OK] key and the test print is executed with the setting value that has been set by steps 2 and 3.

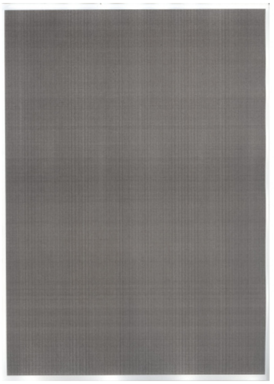
   Pressing the [CANCEL] key stops the test print.

   If any alarm that is shown in the following details column is issued at startup of test print or while test print is in progress, the test print is interrupted. (For error details, refer to section 6.5.1 LCD Status Message/ Trouble Table. However, the comment to be displayed is different in the case of the PU test print.)

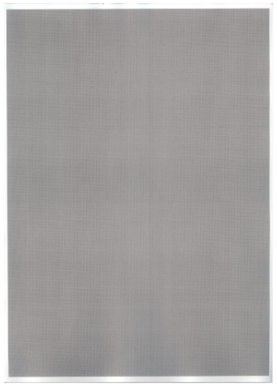
Panel display	Details
STACKER FULL	Stacker full
PAPER END SELECTED TRAY	No paper
DUPLEX UNIT IS NOT INSTALLED	DUPLEX is not installed
SELECTED TRAY IS NOT INSTALLED	Selected tray is not installed.
REMOVE PAPER OUT OF DUPLEX	DUPLEX internal error
INSTALL CASSETTE TRAY OPEN	Cassette removal

Print Patterns (Cannot be used for checking print quality.)

Patterns 0 and 8 to 15 ... Blank sheet print



Pattern 1



Pattern 2

Pattern 3

Pattern 4

Pattern 5

Pattern 6

Pattern 7

- During printing, the following messages are displayed.

```
P=***

```

P : Number of test print copies [unit: copies]

- Displays are switched by pressing the [MENU△] key.

```
T=*** U=***[###]
H=***%
```

U : *** = Upper heater temperature measurement value [unit:°C]
[***] = Print execution target temperature [unit:°C]
T : Environment temperature measurement value [unit:°C]
H : Environment humidity measurement value [unit: %]

- Displays are switched by pressing the [MENU△] key.

```
KTR=*.**

```

KTR indicate the transfer voltage setting value. (unit: KV)

- Displays are switched by pressing the [MENU△] key.

```
KR=*.**

```

KR : BLACK transfer roller resistance value [unit: uA]

- Displays are switched by pressing the [MENU△] key.

```
ETMP=***UTMP=***

```

ETMP : Hopping motor constant speed correction parameter (environment temperature) [unit: DEC]
UTMP : Fuser motor constant speed correction parameter (fuse target temperature) [unit: DEC]

- Displays are switched by pressing the [MENU△] key.

```
DB:k**

```

DB : Develop voltage setting table ID number [unit: HEX]

- Displays are switched by pressing the [MENU△] key.

```
TR1:k**
TR2:k**
```

TRI : Transfer voltage parameter VTR1 table ID number [unit: HEX)
TR2 : Transfer voltage parameter VTR2 table ID number [unit: HEX]

- Displays are switched by pressing the [MENU△] key.

```
TROFF:**
   xx XXX
```

TROFF : Transfer OFF voltage setting table ID number [unit: HEX]
xx : Belt thermistor temperature [unit:°C]
XXX : Belt thermistor AD value [unit: HEX]

5. Repeat steps 2 to 4 as required.
6. Pressing the [CANCEL] key terminates the test. (Returns to the status of step 1.)

5.3.2.6 Indication of consumable part counters

This self-diagnosis is practiced to indicate the consumed states of consumable parts.

1. Enter the self-diagnostic mode (level 1), press the [MENU△] or [MENU ▽] key repeatedly ,and press the [Enter] key when the "CONSUMABLE STATUS" is displayed in the upper row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)
2. When the [MENU△], MENU- key is pressed, consumption statuses of the consumable items are displayed in order. (Pressing the [ONLINE] or [CANCEL] key is invalid.)
3. Pressing the [Back] key terminates the test. (Returns to the status of step 1.)

Display area, upper row	Display area, lower row	Format	Unit	Details
K-ID UNIT	******** IMAGES	DEC	Images	It shows the number of rotations counted after installation of a new EP toner cartridge on a three A4 3Pages/Job basis.
FUSER UNIT	******** PRINTS	DEC	PAGE	The number of sheets after a new fuser unit was attached.
K-TONER	******** %	DEC	%	It shows the amount of toner consumption.
K-STC MODE CNT	******** x8192	DEC	DOTS	It shows the number of print dot counts of the toner. (It is a cumulative value counted after the first use of the printer.)
K OVER RIDE CNT	******** TIMES	DEC	Times	It shows the number of overrides of life warnings for the toner cartridge.

5.3.2.7 Indication of printed page counters

This self-diagnosis is practiced to indicate the current number of printed pages of the printer.

1. Enter the self-diagnostic mode (level 1), press the [MENU△] or [MENU▽] key repeatedly ,and press the [Enter] key when the "PRINTER STATUS" is displayed in the upper row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)
2. When the [MENU△], MENU- key is pressed, statuses of the number of print copies are displayed in order.(Pressing the [ONLINE] or [CANCEL] key is invalid.)
3. Pressing the [Back] key terminates the test. (Returns to the status of step 1.)

Display area, upper row	Display area, lower row	Format	Unit	Details
K-TOTAL DRUM CNT	******** IMAGES	DEC	Images	It shows the cumulative number of rotations.
TOTAL SHEET CNT	******** COUNTS	DEC	Prints	Total number of print copies are displayed.

5.3.2.8 Factory/Shipping switching

This self-diagnosis is practiced to switch the PU (PRN) PCB between the Factory mode and the Shipping mode.

1. Enter the self-diagnostic mode (level 1) and keep pressing the [MENU△] or [MENU▽] key until the following message is displayed.

```
FACTORY MODE SET

```

2. When the [Enter] key is pressed, the following message is displayed. Keep pressing the [MENU△] or [MENU▽]key until the target item (refer to the following table) is displayed.

```
FACTORY MODE
SHIPPING MODE        *
```

3. While the desired item to set is being displayed, press the [Enter] key that enables selection of the setting values.
4. While the desired setting value is being displayed, press the [Enter] key for long period (3 seconds) that registers the displayed value in EEPROM. (Returns to the status of step 2.)
5. Repeat steps 2 to 4 as required.
6. Pressing the [Back] key terminates the test. (Returns to the status of step 1.)

Display	Setting value	Function
FACTORY MODE	FACTORY MODE	Sets the Factory working mode (fuse cut invalid mode).
	SHIPPING MODE	Releases the Factory working mode to make the fuse cut function valid.
FUSE INTACT Note: ******* indicates INTACT or BLOWN.	K-ID UNIT ******	Checks the fuse status of the EP toner cartridge.
	FUSER UNIT ******	Checks the fuse status of the fuser unit.

5.3.2.9 Setup of self-diagnostic function

This self-diagnosis is practiced to Enable/Disable the error detections of the different types of sensors.

The error detections can be disabled or enabled temporarily for troubleshooting purposes.

However, this function should be exercised with utmost care, since it is able to set some items that require specialized knowledge in the field of operation of the engine.

After the function has been used, the set values must always be reset to the defaults.

1. Enter the self-diagnostic mode (level 1) and keep pressing the [MENU△] or [MENU▽] key until the following message is displayed.

```
SENSOR SETTING

```

2. When the [Enter] key is pressed, the following message is displayed. Keep pressing the [MENU△] or [MENU▽] key until the target item (refer to the table below) is displayed.

```
TONER SENSOR
ENABLE          *
```

3. When the [Enter] key is pressed, the following message is displayed.
   Pressing the [MENU△] key increments the setting value.
   Pressing the [MENU▽] key decrements the setting value.
4. While the desired setting value is being displayed, press the [Enter] key for long period (3 seconds) that registers the displayed value in EEPROM. (Returns to the status of step 2.)
5. Repeat steps 2 to 4 as required.
6. Pressing the [Back] key terminates (except the status of step 4) the setting. (Returns to the status of step 1.)

Display	Setting value	Operation at the setting value	Function
TONER SENSOR	ENABLE	Detects	Valid/Invalid of toner sensor operation.
	DISABLE	Not to detect	
ID UNIT CHECK	ENABLE	Checks	Valid/Invalid of ID installation check operation.
	DISABLE	Not to check	
DRUM OVER LIFE	STOP	Not to continue	The restriction on extending the life of toner-related items five times is lifted.
	CONTINUANCE	To continue	
WR POINT REV TBL=**H±*.***mm	00H~FFH	Correction value	The correction value is added to the existing write-down position.
BOTTOM WRT POINT TBL=**H±*.***mm	00H~FFH	Cut value	Amount of cut at the rear end of a paper is set.

Hatched portion: Default is shown

5.3.2.10 Indication of LED head serial number

This self-diagnosis is practiced to check whether a downloaded LED head data matches the serial number of the actual LED head.

1. Enter the self-diagnostic mode (level 1), press the [MENU△] or [MENU▽] key repeatedly ,and press the [Enter] key when the "LED HEAD DATA" is displayed in the upper row of the display area. (Pressing the [MENU△] key increments the test item and pressing the [MENU▽] key decrements the test item.)
2. When the [MENU△] key or the [MENU▽] key is pressed, serial numbers of the K LED head data are displayed in order.
3. Pressing the [Back] key terminates the test. (Returns to the status of step 1.)

```
K ** ** ****
xxxxxxxxxxxxxx
```

** ** **** : Rev number

xxxxxxxxxxxxx : serial number

5.3.2.11 NVRAM parameter setting

Do not use this menu item.

5.3.3 Various types of printing on the printer unit

Menu Map printing

Print program versions and information of CU configuration.

Operation:

(1) Press the [Enter] button once in the [ONLINE] state to cause [Information Menu] to be displayed.

(2) Press the [Enter] button to cause [PRINT MENU MAP/EXECUTE] to appear.

(3) Press the [Enter] button.

Network Information printing

Operation:

(1) Press the [Enter] button once in the [ONLINE] state to cause [Information Menu] to be displayed.

(2) Press the [Enter] button.

(3) Press the [MENU△] button several times to cause [Network Information/EXECUTE] to appear.

(4) Press the [Enter] button.

Demo printing

Print demo patterns for destinations stored in ROM.

Operation:

(1) Press the [Enter] button once in the [ONLINE] state to cause [Information Menu] to be displayed.

(2) Press the [Enter] button.

(3) Press the [MENU△] button several times to cause [DEMO1/EXECUTE] to appear.

(4) Press the [Enter] button.

5.3.4 Functions of keys when depressed at power-on

The different keys provide the following functions when the power is turned on to the printer.

The following keys turn effective when pressed and held down, until "RAM CHECK" is displayed in the upper line of the LCD, and three to four asterisks "*" in the lower line.

(1) [BACK] & [ONLINE] & [CANCEL] button

These buttons launch the CU program without activating the objects which were added in the download mode, etc.

(2) [MENU△] & [MENU▽] button

These buttons launch the system maintenance menu.

(3) [BACK] & [MENU▽] & [ENTER] button

These buttons start the printer in the mode in which it remains permanently ONLINE, in disregard of warnings/errors (Factory-support function).

(4) [ONLINE] button

This button starts the printer in the dedicated mode in which objects, such as network, USB, etc., are downloaded.

(5) [ENTER] button

This button launches the Admin menu.

(6) [Menu△] button

This button starts the PRINT STATISTIC menu.

5.4 Setup after replacement of parts

The following describes the adjustments required after part replacement:

Replaced part	Adjustment
LED head	Requires no adjustments.
Drum cartridge	Requires no adjustments.
Fuser unit	Requires no adjustments.
CU/PU board	Replacement of the EEPROM, which uses EEPROM intended for use in a user printer.

Note: See section 4.2.6, LED assembly for compatibility of LEDs with the LEDs to replace with them, and identification of those LEDs.

5.4.1 Notes on board replacement

1. When the EEPROM on a board to remove can be accessed
 (When SERVICE CALL 104 [Engine EEPROM Error] or 40 [EEPROM Error] is not displayed.)

Note: A CU information area and a PU information area exist separately in EEPROM of a CU/PU PCB.

(1) Remove information from the EEPROM in the PU and CU block, of the board, and temporary store them onto an HDD of a computer, by using then board replacement function of Maintenance Utility (Maintenance Utility Operating Manual, section 2.4.1.1.9 about board replacement functionality).

(2) By using the board replacement or setting function, copy the information and setting information into the EEPROM of a board to replace with.

(3) When only the information or setting information can be removed from the board to replace, copy it into the EEPROM of the replacement board by using the board replacement function. With the board replacement function, separately configure the other information, which cannot be removed. Perform PU-block serial-number setting (Maintenance Utility Operating Manual, section 2.4.1.1.9.5), and make a change to the Shipping mode (Maintenance Utility Operating Manual, section 2.4.1.1.9.6), in setting windows when the information cannot be removed. Configure CU-block serial number information (Maintenance Utility Operating Manual, section 2.4.1.1.9.4) when the setting information cannot be removed.

Note: When removing or writing information from/into the EEPROM by using Maintenance Utility, use the procedure shown below to place the printer to the Forced ONLINE mode before accessing the EEPROM. Even in the forced ONLINE mode, the printer provides an error indication when having an error.

1. When turning on the printer, press and hold down [Back], [MENU▽] and [Enter] button in combination until STATUS MODE appears on the operator panel.
2. The printer displays ONLINE when operating properly, and provides an error indication when having an error, where the printer is internally online, being ready to communicate.

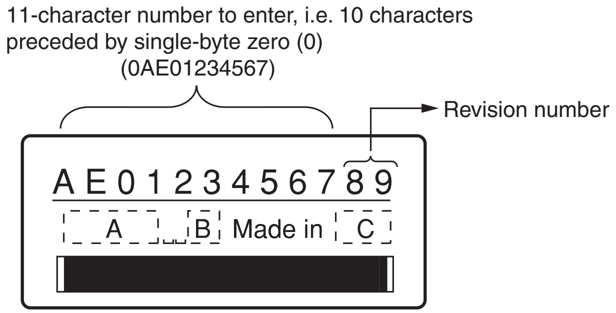
2. When the EEPROM on a board to remove cannot be accessed:

When the operator panel displays SERVICE CALL 104 [Engine EEPROM Error] or 40 [EEPROM Error] for, or data cannot be read from the EEPROM of, a board to remove, follow the following procedure to perform operation by using Maintenance Utility after the board is replaced with a new one:

(1) Serial number setting
(Maintenance Utility Operating Manual, section 2.4.1.1.6.3)

A SAP serial number is assigned to the printer. The SAP serial number is at the top of the serial number label of the printer, consisting of a total of 12 characters -- two characters that indicates a production place, two characters that indicates a month and year, six characters that indicates a manufacture number (sequence number) and two characters that indicates a revision number.

- Select PU Serial Number under “Select printer serial number”, and “Display the serial number only” under Display mode.
  Do not enter the CU serial number.
- The PU serial number is 10 characters a two-character revision number excluded from the 12-character SAP serial number.
- Make settings in the window for the serial number information setting described in section 2.4.1.1.6.3 in section 2.4.1.1.6 about board setting functionality.
- To specify a PU serial number, in the PU serial number setting window, enter an 11-character number with the first character a single-byte zero (0) (note a read PU serial number is 10 characters), i.e. a 10-character number prefixed with a single-byte zero (0), such as the number shown in the following image, excluding the revision number two digits.


11-character number to enter, i.e. 10 characters
preceded by single-byte zero (0)
(0AE01234567)
Revision number
A E 0 1 2 3 4 5 6 7 8 9
A
B
Made in
C

Serial number label image

- The printer outputs the PU serial number in the header of the printer's configuration report (a Menu Map). After the PU serial number is changed, it can be checked by printing a Menu Map from the printer.

(2) Change to Shipping mode
(section 2.4.1.1.6.4 of Maintenance Utility Operating Manual)

The printer is placed in the Factory mode after the CU/PU board is replaced with a new one. Switch the printer to the Shipping mode.

- Use the window for the Factory/Shipping mode described section 2.4.1.1.6.4 in Maintenance Utility section 2.4.1.1.6 about board setting functionality

Note: Note that replacing the EEPROM (the engine control board) clears life information about units, including the belt, toner and image drums, causing errors in managing the lives of the units until the units are replaced. Below is the counts cleared with such CU/PU board replacement. When the units are replaced with new ones, their respective counts except for Total Sheets Fed are cleared, the errors being corrected.

Item	Description	Count description
Fuser unit	Fuser unit life count.	A value converted on an A4 page basis from the number of pages printed to date after installation of a new fuser unit.
EP toner cartridge	EP toner cartridge life count.	A value converted on an A4 page basis from the number of pages printed to date after installation of a new EP toner cartridge.
Total number of sheets	Printer life count.	The total number of sheets fed.
Print black	Number of pages printed with an image drum.	The number of pages printed after installation of a new EP toner cartridge.

5.4.2 Setup of destination

[Checking method: Menu Map Print]

The destination is set prior to shipping out of a maintenance PCB. (Maintenance PCBs area available for each destination.) Basically, you don't need to change the destination settings.

The important information about settings will be cleared if you change the destination setting.

Note! This setting is stored on the EEPROM of the CU/PU PCB.

1. Setup on the operation panel: Start the printer in the maintenance mode, and set the destination.
   (1) Turn on the power with the [MENU△] & [MENU▽] button held down.
   (2) By pressing [ENTER] button after "SYSTEM MAINTE" is displayed briefly, "ENTER PASSWORD" will be displayed. By pressing a password, the display will change to "OKIUSER".
   (3) Press the [ENTER] button.
   (4) "OEL" will appear in the lower line of the LCD.
   (5) Press the [ENTER] button, select the destination by operating the [MENU△] or [MENU▽] button, and press the [ENTER] button.
   (6) Press the [BACK] button to define the setting. "JPI"
   (7) Press the [BACK] button twice, or the [ONLINE] button once. This will cause the printer to restart with the destination modified.
2. Explanation

   This printer is ROM used in common for domestic and overseas markets.

   This setting is stored on the EEPROM of the CU/PU PCB.

   When the version number of the program ROM is changed, the setting will be reset to the default value.

5.4.3 Setup of date and time

1. Setup on the operation panel
   (1) Turn the printer power switch to ON while pressing the [ENTER] button. Release your finger from the button after "ADMIN MENU" appears.
   (2) After "ENTER PASSWORD" is displayed, press the [MENU△] or [MENU▽] button several times to display the first digit of the password. Then, press the [ENTER] button.Enter the password of 6th to 12th digits as the same step.

   Memo The default of the password is "aaaaaa".

   (3) Press the [MENU△] button several times to display the "TIME SETUP" to be set.
   (4) Press the [ENTER] button.
   (5) Press the [MENU△] or [MENU▽] button several times to display the "TIME SETING" to be set.
   (6) Press the [ENTER] button.
   (7) Press the [MENU△] or [MENU▽] button several times to display [Set Value].
   (8) Press the [ENTER] button to add [*] to the right side of the value.
   (9) Press the [ONLINE] button to be "ONLINE".

5.5 Administrator Menu List of the Printer

This menu can specify Enable/ Disable of each category of the user menus. The categories of Disable are not displayed on the user menu.

This menu should be used only by the system administrator.

How to Change

(1) Turn off the printer.

Memo Refer to “Turning off the printer” in Section 3.5.2 for how to turn off the printer.

(2) Turn of the printer while pressing the [Enter] button. Release the button when [ADMIN MENU] is displayed.

(3) After [ENTER PASSWORD] is displayed, press the [MENU△] or [MENU▽] button several times to display the first digit of the password. Then, press the [ENTER] button. Enter the password of 6th to 12th digits as the same step.

Memo The default of the password is “aaaaaa”.

(4) Press the [MENU△] button several times to display the category to be set.

(5) Press the [ENTER] button.

(6) Press the [MENU△] or [MENU▽] button several times to display an item to be set.

(7) Press the [ENTER] button.

Note! In the initialization of the flash memory, “ARE YOU SURE?” is displayed. Check again whether to execute. When executing, press the [MENU△] or [MENU▽] button to display “YES”, and then, press the [ENTER] button. The printer reboots automatically. After [PLEASE POW OFF/ SHUTDOEN COMP] is displayed, turn off and on the power. Each change is made.

(8) Press the [MENU△] or [MENU▽] button several times to display [Set Value].

(9) Press the [ENTER] button to add [*] to the right side of the value.

(10) Press the [ONLINE] button to be "ONLINE".

Category	Item	Value	Function / Notes
ADMIN MENU	ENTER PASSWORD	************	Enter a password to enter Admin menu. The default value is "aaaaaa" From 6 to 12 digits of numbers or Roman character to input.
OP MENU	ALL CATEGORY	ENABLE DISABLE	Set up VALID/INVALID of all categories in USERS MENU.
	PRINT JOBS MENU	ENABLE DISABLE	Set up VALID/INVALID of PRINT JOBS MENU category.
	INFORMATION MENU	ENABLE DISABLE	Set up VALID/INVALID of INFORMATION MENU category.
	SHUTDOWN MENU	ENABLE DISABLE	Set up VALID/INVALID of SHUTDOWN MENU category.
	PRINT MENU	ENABLE DISABLE	Set up VALID/INVALID of PRINT MENU category.
	MEDIA MENU	ENABLE DISABLE	Set up VALID/INVALID of MEDIA MENU category.
	SYS CONFIG MENU	ENABLE DISABLE	Set up VALID/INVALID of SYSTEM CONFIG MENU category.
	PCL EMULATION	ENABLE DISABLE	Set up VALID/INVALID of PCL EMULATION MENU category.
	5577 EMULATION	ENABLE DISABLE	Set up VALID/INVALID of 5577 EMULATION MENU category. [Display Condition] "SYSTEM MAINTENANCE" - "PERSONALITY" - "IBM 5577" should be "ENABLE".
	PPR EMULATION IONPPRULATION	ENABLE DISABLE	Set up VALID/INVALID of PPR EMULATION MENU category. [Display Condition] "SYSTEM MAINTENANCE" - "PERSONALITY" - "IBM PPR III XL" should be "ENABLE".

Category	Item	Value	Function / Notes
OP MENU	FX EMULATION	ENABLE DISABLE	Set up VALID/INVALID of FX EMULATION MENU category. [Display Condition] "SYSTEM MAINTENANCE" - "PERSONALITY" - "EPSON FX" should be "ENABLE".
	ESC/P EMULATION	ENABLE DISABLE	Set up VALID/INVALID of ESC/P EMULATION MENU category. [Display Condition] "SYSTEM MAINTENANCE" - "PERSONALITY" - "ESC/P" should be "ENABLE".
	PARALLEL MENU	ENABLE DISABLE	Set up VALID/INVALID of PARALLEL MENU category.
	USB MENU	ENABLE DISABLE	Set up VALID/INVALID of USB MENU category.
	NETWORK MENU	ENABLE DISABLE	Set up VALID/INVALID of NETWORK MENU category.
	MEMORY MENU	ENABLE DISABLE	Set up VALID/INVALID of MEMORY MENU category.
	SYS ADJUST MENU	ENABLE DISABLE	Set up VALID/INVALID of SYSTEM ADJUSTMENT MENU category.
	MAINTENANCE MENU	ENABLE DISABLE	Set up VALID/INVALID of MAINTENANCE MENU category.
	USAGE MENU	ENABLE DISABLE	Set up VALID/INVALID of USAGE MENU category.
	VM SETUP	ENABLE DISABLE	Set up VALID/INVALID of VM SETUP category.
	APP SETTING	ENABLE DISABLE	Set up VALID/INVALID of APP SETTING category.
	APPLICATION	ENABLE DISABLE	Set up VALID/INVALID of APPLICATION category.

Category	Item	Value	Function / Notes
CONFIG MENU	NEARLIFE LED	ENABLE DISABLE	Conducts the settings of LED lighting control when NearLife warning of a toner, drum, fuser occurs.
	HIGH HUM MODE	ON OFF	Set simplex fuser temperature mode for paper curl. The fuser temperature mode against paper curl is set when"ON" is selected.
	PEAK POW CONTROL	NORMAL LOW	Sets NORMAL/LOW of low peak power control.
TIME SETUP	DATE FORMAT	YYYY/MM/DD MM/DD/YYYY DD/MM/YYYY	Set up Format of Data.
	TIME ZONE	-12:00 ≀ +9:00 ≀ +13:00	Set up the Time Zone. Range is (-12:00~+13:00,step is 15min)
	DAY LIGHT SAVING	ON OFF	Set up Day Light.
	TIME SETTING	2000/01/01 00 :00 ≀ 2009/01/01 00 :00 ≀ 2091/12/31 23 :59 ------------------ 01/01/2000 00 :00 ≀ 01/01/2009 00 :00 ≀ 12/31/2091 23 :59 ------------------ 01/01/2000 00 :00 ≀ 01/01/2009 00 :00 ≀ 31/12/2091 23 :59	Set up Time Format is follow the "DATE FORMAT"

Category	Item	Value	Function / Notes
SECURITY MENU	JOB LIMITATION	OFF ENCRYPTED JOB	Sets whether to accept or discard data except encrypted secure print data. This menu is displayed when an optional SD memory card is inserted.
	MAKESECU-RESDCARD	EXECUTE	Enables the encryption function for data to store an SD memory card. This option turns on cipher key generation and encryption function (security mode) information and initializes the SD memory card. Executing this menu restarts the printer. This menu is displayed when an optional SD memory card is inserted.
	MAKE-NORMAL-SDCARD	EXECUTE	Disables the encryption function for data to store an SD memory card. This option turns off cipher key deletion and encryption function (security mode) information and initializes the SD card. Executing this menu restarts the printer. This menu is displayed when an optional SD memory card is inserted.
	RESET CIPHER KEY	EXECUTE	Enables the encryption function, and re-generates a cipher key with use of an SD memory card. With this processing, all data that is in the SD memory card is made unrestorable. Executing this menu restarts the printer. This menu is displayed when an optional SD memory card is inserted.

Category	Item	Value	Function / Notes
FILE SYS MAINTE1 *1	SD INITIALIZE	EXECUTE	Puts an SD memory card back to the factory-shipped configuration. Executing this menu restarts the printer. This menu is displayed when an optional SD memory card is inserted.
	PARTITION SIZE	EXECUTE	It will transfer to the list screen of SD partition size. This menu is displayed when an optional SD memory card is inserted.
	PCL /COMMON /PS	nnn%/mmm%/lll%	Set up the partition size. nn,mm,ll should be 1 ～ 98 and nn+mm+ll=100 The display for changed partition size will be blinked. Press Back/Enter switch for transferring of changed location. The following confirmation message This menu is displayed when an optional SD memory card is inserted.
	SD FORMATTING	PCL COMMON PS *2	Format for the specified partition. Executing this menu restarts the printer. This menu is displayed when an optional SD memory card is inserted.
	FLASH INITIALIZE	EXECUTE	This menu erases the following information. • User font • User demo page • Watermarks and so on

Category	Item	Value	Function / Notes
FILE SYS MAINTE2	CHK FILE SYS	EXECUTE	It will solve the mismatch between the actual and the displayed free space of the file system and recover the management data (FAT information). The following message will appear after the execution. This menu is displayed when an optional SD memory card is inserted.
	CHK ALL SECTORS	EXECUTE	It will recover an error of SD sector information and the mismatch of the file system noted above. This menu is displayed when an optional SD memory card is inserted.
	SD CARD	ENABLE DISABLE	If the printer is unable to start even with SD installment due to its break-down, it will start as without SD installment by setting "DISABLE" regardless of whether with SD installment or without. Executing this menu restarts the printer. This menu is displayed when an optional SD memory card is inserted.
	SD CARD ERASE	EXECUTE	It features of the deletion of all the data stored in the SD memory card not to be recovered them. It aimes at the complete deletion of printing and individual data left in the SD memory card by disposal of the printer. This menu is displayed when an optional SD memory card is inserted.
	INITIAL LOCK	YES NO	If selecting "YES", it will disappear the item of "ADMIN MENU" - "FILE SYS MAINTE1". [Display Codition] "PRINT STATISTICS" - "USAGE REPORT" should be "DISABLE"
LANGUAGE MENU	LANG INITIALIZE	EXECUTE	Initialize the message file loaded in FLASH. Executing this menu restarts the printer.
PS MENU	L1 TRAY	TYPE1 TYPE2	The tray selection number of level 1 operator for TYPE1 setting from 1 is valid and from 0 for TYPE2 setting.

Category	Item	Value	Function / Notes
SIDM MENU	SIDM MANUAL ID#	0 ≀ 9	Set up Pn specified MANUAL by MANUAL-1 ID No.FX/PPR/ESCP Emu in CSFcontrol command(ESC EM Pn).
	SIDM MANUAL2 ID#	0 ≀ 3 ≀ 9	Set up Pn specified MANUAL by MANUAL-2 ID No.FX/PPR Emu in CSF control command(ESC EM Pn). For Japanese brands, This Item is not display.
	SIDM MP TRAY ID#	0 ≀ 4 ≀ 9	Set up Pn specified TRAY O (MP Tray) by MP Tray ID No.FX/PPR/ESCP Emu in CSF control command(ESC EM Pn).
	SIDM TRAY1 ID#	0 1 ≀ 9	Set up Pn specified TRAY 1 by Tray 1 ID No.FX/PPR/ESCP Emu in CSF control command(ESC EM Pn).
	SIDM TRAY2 ID#	0 ≀ 2 ≀ 9	Set up Pn specified TRAY 2 by Tray 2 ID No.FX/PPR/ESCP Emu in CSF control command(ESC EM Pn). [Display Condition] Tray 2 installment
	SIDM TRAY3 ID#	0 ≀ 6 ≀ 9	Set up Pn specified TRAY 3 by Tray 3 ID No.FX/PPR/ESCP Emu in CSF control command(ESC EM Pn). [Display Condition] Tray 3 installment (B840 only)
CHANGE PASSWORD	NEW PASSWORD	************	Set a new password for entering administrator's menu. From 6 to 12 digits of number or Roman character can be enter.
	VERIFY PASSWORD	************	Let users enter a new password set in "NEW PASSWORD"to enter administrator's menu. From 6 to 12 digits of number or Roman character can be enter.

*1 FILE SYS MAINTE1 is displayed by changing the default of "FILE SYS MAINTE2" - "INITIAL LOCK" to "NO".

*2 The set value “PS” is displayed only on B840dn.

6. CLEANING

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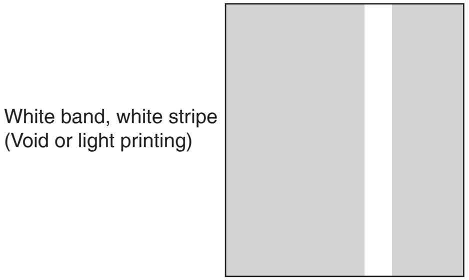
6.1 Cleaning

Clean the interior and outside of the printer, as needed, using a waste cloth and small vacuum cleaner (hand cleaner).

Note! Be careful not to touch the image drum terminals, LED lens array and LED head connectors.

6.2 Cleaning the LED lens array

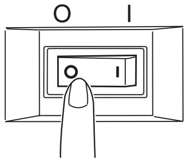
If a vertical white band or white stripe (partial print, light print) is observed in the print face, clean the LED lens array.


White band, white stripe
(Void or light printing)

Cleaning the LED head

Execute this cleaning if an output shows a light fuzzy print or white stripes, or characters are blurred.

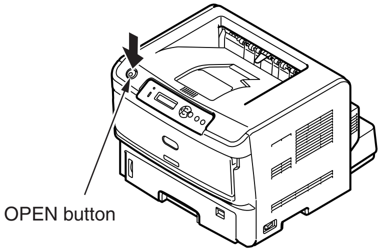
(1) Turn OFF the power of the printer.



(2) Open the top cover by pressing the OPEN button.

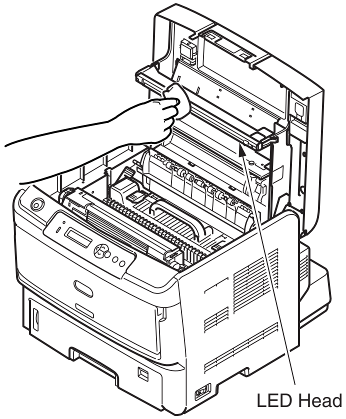
⚠**Caution**	Personal injuries may occur.	⚠

The fuser unit is extremely hot. Do not touch it.

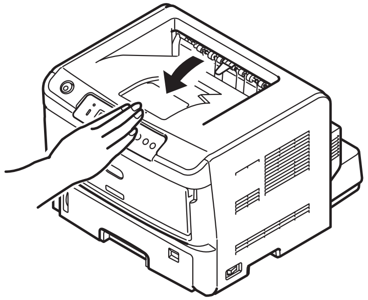

OPEN button

(3) Wipe lightly the four lens surfaces of the LED head with a soft tissue paper.

Note! Do not use methyl alcohol, paint thinner or any other solvent, since they damage the LED head.



(4) Close the top cover.



6.3 Cleaning of rollers

If vertical stripes are observed in the print face, clean the rollers.

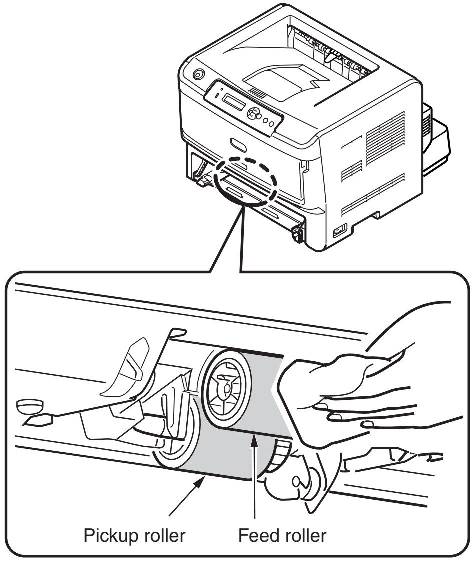
Note! For cleaning, use a soft piece of cloth to avoid scratching the roller surface.

Cleaning the feed rollers, pickup roller and retard roller

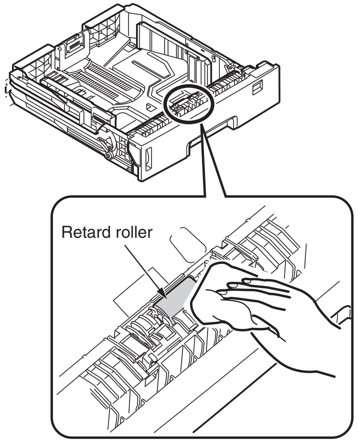
Execute this cleaning if [391 Paper Jam] is issued frequently.

(1) Draw out the paper cassette.

(2) Wipe the feed roller and pickup roller using a piece of cloth impregnated with water and squeezed hard.



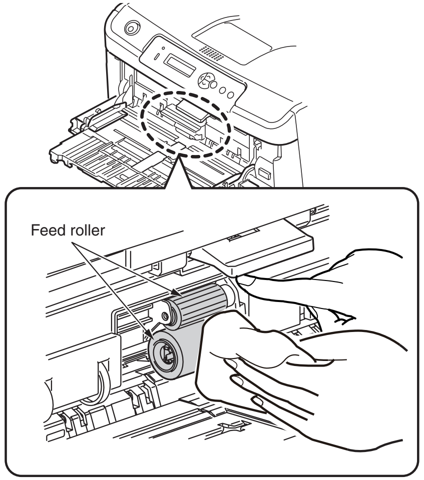
(3) Wipe the retard roller of the paper cassette using a piece of cloth impregnated with water and squeezed hard.



Note! • Clean the 2nd/3rd Tray (optional) in the same manner, if [392 Paper Jam], [393 Paper Jam] recurs frequently.

Execute this cleaning if [390: Check MP Tray] is issued frequently.

Lift the paper pickup section and wipe the feed roller with a tightly wrung cloth soaked in water.



7. TROUBLESHOOTING PROCEDURES

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7.1 Precautions prior to repair

(1) Confirm the basic check items indicated in the User's Manual.

(2) Through hearing from the user, obtain information, as far in detail as possible, on the situation concerning the fault.

(3) Inspect the printer in a condition close to the actual situation in which the fault occurred.

7.2 Items to be checked prior to taking action on abnormal images

(1) Check to see if the printer is operated in an adequate environment.

(2) Check to see if the consumables (EP toner cartridges) are replaced properly.

(3) Check to see if the right paper is used. See the paper specifications.

(4) Check to see if the drum cartridges are installed properly.

7.3 Precautions when taking action on abnormal images

(1) Do not bring your hand or any object in contact with the surface of the OPC drum.

(2) Do not expose the OPC drum to direct sun.

(3) Do not touch the fuser unit, which can be very hot.

(4) Do not expose the image drums to light for over five minutes at the room temperature.

7.4 Preparations for troubleshooting

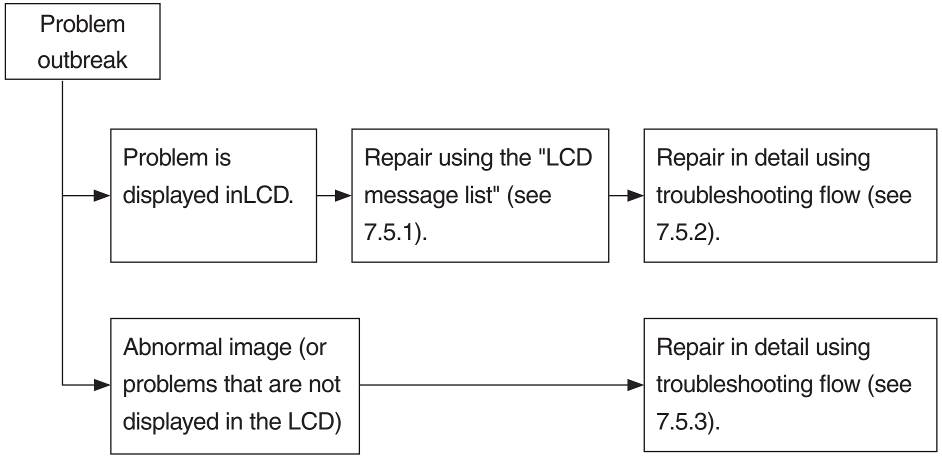
(1) Indications on the operator panel

A fault status of this printer is displayed in the LCD (liquid-crystal display) of the operator panel.

Conduct fault repair properly in accordance with the message displayed in the LCD.

7.5 Troubleshooting method

If a trouble occurs in the printer, search for it by the following procedure.


Problem outbreak
Problem is displayed inLCD.
Repair using the "LCD message list" (see 7.5.1).
Repair in detail using troubleshooting flow (see 7.5.2).
Abnormal image (or problems that are not displayed in the LCD)
Repair in detail using troubleshooting flow (see 7.5.3).

7.5.1 LCD Message list

Initializing

Panel display ☐ means no display in upper line.	LED		Function
	Ready	Atten	
INITIALIZING	Off	Off	The controller side is initializing.
MENU RESETTING	Off	Off	Indicates the EEPROM on the controller side is being reset. The following is the conditions for the EEPROM to be reset: • The CU ROM is changed (a CU firmware version mismatch is detected). • The destination is changed. • The EEPROM is forcedly initialized (the System Maintenance menu). • OEM is set by a PJL command.
RAM CHECK ****************	Off	Off	RAM checking. The rate of checked capacity to the total capacity is displayed on the 2nd line.
FLASH CHECK	Off	Off	Indicates information in unformatted resident/option flash memory is being checked. This message appears after such memory is detected and MAINTENANCE MENU-FLASH FORMAT is executed in the System Maintenance menu. This processing is transparent to users, and this status occurs in no user environments.
FLASH FORMAT	Off	Off	Displays that Flash memory is being formatted. It is displayed it when Resident/Option Flash memory not fomented are detected, or "MAINTENANCE MENU" - "FLASH FORMAT" of a system maintenance menu is performed. The function mentioned above is secret to users.
CHECKING FILE SYSTEM	Off	Off	Displays that SD Card file system is being checked. Process Check of File System is valid to start from "FILE SYS MAINTE2" - "CHECK FILE SYS" of Admin Menu.

Panel display ☐ means no display in upper line.	LED		Function
	Ready	Atten	
ERASING FILE SYSTEM	Off	Off	Indicates that the SD card is being erased. Erase process of the SD card is valid to start from "FILE SYS MAINTE2" - "SD ERASE" of ADMIN MENU.
CHECKING SECTORS nnn%	Off	Off	Displays that a sector of SD card is being checked. Check process of the sector is valid to start from "FILE SYS MAINTE2" - "CHK ALL SECTORS" of Admin Menu. nnn Percentage of checked capacity
PROGRAM UPDATE MODE	Off	Off	Displays that a printer is a special mode to conduct the update of the NIC program (Controller firmware) This mode starts by turning on power with pressing Online switch.Special mode for maintenance.
WAIT A MOMENT DATA RECEIVE	Off	Blink	Displays that the NIC program data to update is being received. Only displays in the special mode for maintenance.
WAIT A MOMENT DATA RECEIVED OK	Off	Off	Displays that the NIC program data to update has been received. Only displays in the special mode for maintenance.
CHECK DATA REC DATA ERROR <%DLCODE%>	Off	On	Displays that an error takes place while the NIC program data to update is being received. %DLCODE% 1: Size Error 2: Check SUM Error 3: Printer Model No. Error 4: Module I/F Version Error 5: FAT Version Error
WAIT A MOMENT DATA WRITING	Off	Blink	Displays that the NIC program data to update is being written. Only displays in the special mode for maintenance.
POWER OFF/ON DATA WRITTEN OK	Off	Off	Displays that the NIC program data to update has been written. Only displays in the special mode for maintenance.
CHECK DATA DATA WRITE ERROR <%DLCODE%>	Off	On	Displays that an error takes place while the NIC program data to update is being written. %DLCODE% 1: Memory alloc Error 2: Download File Error 3: Device Free space acquirement Error 4: Device Free area Shortage Error 5: File Write Error 6: CU-F/W Mismatc
STATUS MODE	Off	Off	Indicates that the printer started in the permanent online mode. Even when having an error after starting in the mode and going online (into a Ready state), the printer processes data (jobs) sent from the outside (a host), indicating an error or warning on the panel. Turning on the printer while using an [Enter], [Back] and [Menu▽] button combination puts the printer into the mode. The button combination is transparent to users, and this state occurs in no user environments.

Normal

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
ONLINE	On	Off	Shows on-line status.	–
OFFLINE	Off	Off	Shows off-line status. * Ready LED in off-line is always assumed to be Off.	To perform printing from a PC, press the ONLINE button to put the printer online.
FILE ACCESSING	Varies	Varies	The status showing FILE SYSTEM (SD Card/FLASH) is being accessed.	–
DATA ARRIVE	Varies	Varies	Data receiving, process not started yet. Displayed mainly during PJL process without text print data or during job spooling.	–
PROCESSING	Blink	Varies	Data receiving or output processing	–
DATA	Varies	Varies	Un-printed data remains in Buffer. Waiting for data to follow.	When the printer pauses with indicating it has data, press the ONLINE button to print the data forcedly, or the CANCEL button to delete the data.
PRINTING	Varies	Varies	A printer is printing.	–
PRINT DEMO PAGE	Varies	Varies	Printing Demo Pages	–
PRINT FONT	Varies	Varies	Printing Font Lists	–
PRINT MENU MAP	Varies	Varies	Printing Menu Maps	–
PRINT FILE LIST	Varies	Varies	Printing File Lists	–
PRINT ERROR LOG	Varies	Varies	Printing Error Logs	–
PRINT NETWORK CONFIG	Varies	Varies	It is shown that a network setup is printing. If chosen by menu "INFORMATION MENU"-"NETWORK", printing of a network setup will be started.	–
☐ COLLATE COPY iii/jjj	Varies	Varies	Collate printing. iii: The number of copy in printing. jjj: the total number of printing. When the total number of printing is 1, it is a normal printing display. In status of Priority=121 ~ 125, Display Priority is 39.	–
☐ COPY kkk/lll	Varies	Varies	Copy printing. kkk: The number of pages in printing. lll: The total number of printing. When the number of copy is 1, it is a normal printing display. In status of Priority=121 ~ 125, Display Priority is 39.	–
VERIFYING JOB	Blink	Varies	Indicates that the integrity of print data for encrypted authentication is being verified (for corruption and tampering).	–
CANCELING JOB	Blink	Varies	Indicates that job cancellation has been instructed and data is being ignored until the job completion.	–
CANCELING JOB (JAM)	Blink	Varies	Indicates if JAM occurs when Jam Recover is OFF, that job cancellation has been instructed and data is being ignored until the job completion.	–
CANCELING JOB	Blink	Varies	Indicates a job being cancelled due to no print permit. (Related to JobAccount) 1. A job received from a user who is denied printing. 2. A color job received from a user who is denied color printing.	–
CANCELING JOB (BUFFER FULL)	Blink	Varies	Indicates that a job is being cancelled because the printer area where the logs are stored has been used up and also "Cancel job" is specified as an operation at the time of Log Full. (Related to JobAccount)	–

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
☐ ADJUSTING TEMP.	Varies	Varies	Shows cooling down status. It is cautious of a period following "Adjusting Temp".	–
☐ ADJUSTING TEMP	Varies	Varies	Warming up. In this case, Leisus I/F : STSENG bit #0 should be '0'.	–
☐ OPTIMIZING TEMP	Varies	Varies	Indicates that printing has been suspended for a while due to high temperature of the drum, or the printer is in a wait state to cope with heat at the time of switching narrow paper to wide paper.	–
☐ POWER SAVE	Varies	Varies	A printer is in power save mode. Displayed in a combination of other message in the first line. LCD back light extincts in the energy saving mode and blinks after that mode. If the power is on during the energy saving mode, it lights up and extincts after 30 seconds. However, the energy saming mode remains. Also, it lights up in the priority 365 in shut down process.	–
☐ SLEEP MODE	Varies	Varies	Indicates that printer have entered sleep mode. It is difficult to actually confirm the display to enter sleep mode immediately after this display was done.	–

Warning

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
☐ 509 PRINTER LIFE	Varies	Off	The life of printer go to the end. When print page count reached 1,200,000 and pjl command OKIPRINTERLIFESUPPORT is set to ON, this status will be raised.	Warning
☐ NON OEM EP-TONER DETECTED	Varies	On	Indicates the EP toner cartridge is not for use in the printer.	Warning
☐ EP-TONER REGIONAL MISMATCH	Varies	On	Indicates the EP toner cartridge is not for use in the printer.	Warning
☐ NON GENUINE EP-TONER	Varies	On	Indicates the EP toner cartridge is not for use in the printer.	Warning
☐ TONER SENSOR ERROR	Varies	On	Something is wrong with the toner sensor. When the Engine setting is Shipping mode, displayed in a combination of other message in the first line. If the engine setting is Factory mode, error display appears as mentioned later. If the same error is detected in Shipping Mode, it is indicated as Error 540/541/542/543. If the same error is detected in Factory Mode, it is indicated as service call of 160/161/162/163.	Warning
☐ PS3 EMUL ERROR	Blink	Varies	Interpreter detects an error due to the following reason. Receive data after this is ignored until the job completion. When the job is completely received, this is automatically cleared. - The job has a grammatical error. - The page is complicated, and VM	Warning

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
☐ ORDER EP-TONER	Varies	On (Off)	Indicates that the life of the EP toner cartridge is near end. Printing can continue until an EP toner life end error occurs. When DISABLE is selected through “CONFIG MENU” - “NEARLIFE LED” of ADMIN MENU, the Atten LED stays off. ---------------------------------- (*) Internally, it indicates TC waste toner near full.	Warning
☐ ORDER EP-TONER	Varies	On (Blink) (Off)	Indicates that the life of the EP toner cartridge is near end. Printing can continue until an EP toner life end error occurs. When DISABLE is selected through “CONFIG MENU” - “NEARLIFE LED” of ADMIN MENU, the Atten LED stays off. ----------------------------------- Internally, it indicates that remaining toner is little.	Warning
☐ ORDER EP-TONER	Varies	On (Off)	Indicates that the life of the EP toner cartridge is near end. Printing can continue until an EP toner life end error occurs. When DISABLE is selected through “CONFIG MENU” - “NEARLIFE LED” of ADMIN MENU, the Atten LED stays off. ---------------------------------- (*) Internally, it indicates near end of life of the image drum.	Warning
☐ FUSER LIFE	Varies	On	The established machine shows the thing that is longevity (warning). This status is displayed to turn on the cover again in opening/close or the power supply after the established machine longevity error occurs. Moreover, it is generated instead of the established machine longevity error when set to the print continuance mode (user closed-door) at the established machine longevity.	Warning

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
☐ EP-TONER NOT INSTALLED	Varies	On	Notifies the EP toner cartridge is not installed. This is a warning only.	Warning
☐ EP-TONER LIFE	Varies	On	Indicates the end of the EP toner cartridge life. This status message is displayed when the cover is opened and closed or power is restored after a toner empty error occurs. Also, this error occurs instead of a toner empty error when a mode to continue printing with toner empty (hidden from users) is set. ------------------------------- Internally, it indicates the EP toner cartridge is empty.	Warning
☐ EP-TONER LIFE	Varies	On	Indicates the end of the EP toner cartridge life. This status message is displayed when the cover is opened and closed or power is restored after a toner empty error occurs. Also, this error occurs instead of a toner empty error when a mode to continue printing with toner empty (hidden from users) is set. ------------------------------- Internally, it indicates waster toner full.	Warning
☐ EP-TONER LIFE	Varies	On	Indicates the end of the EP toner cartridge life. This status occurs when the system is temporarily recovered from an EP toner life end error by opening and closing the cover. Also, this error occurs instead of a toner empty error when a mode to continue printing with toner empty (hidden from users) is set. -- Internally, it indicates the image drum has reached the end of its life.	Warning

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
☐ HEAD DATA ERROR	Varies	On	The LED head calibration data is missing or invalid. Printing can be proceeded without calibrating light radiation. PU firmware does not notify this warning to CU firmware at the time of Shipping Mode. Therefore, this status does not occur in a user environment.	Warning
☐ %TRAY% EMPTY	Varies	On	%TRAY%: The tray is empty. Treated as Warning until printing to the empty tray is designated. In this case, Leisus I/F : corresponding bits of both LFTERR and LFTERR2 should be '0'. %TRAY% Tray1 Tray2 Tray3 (B840 only) MP TRAY	Warning
☐ FILE SYSTEM FULL	Varies	On	File System-full is occurring. Because this is a temporary warning, it remains until the end of the job and disappears.	Warning
☐ FILE SYSTEM WRITE PROTECTED	Varies	On	An attempt to write in a read-only file was done. Because this is a temporary warning, it remains until the end of the job and disappears.	Warning
☐ USB HUB UNSUPPORTED	Varies	Varies	It is occupied that the USB hub that the printer doesn't correspond is connected. It is displayed while it is connected for the USB hub that the printer doesn't correspond.	Warning
☐ UNSUPPORTED USB DEVICE DETECTED	Varies	Varies	It is occupied that the USB device that the printer doesn't correspond is connected. It is displayed while it is connected for the universal serial bus device that the printer doesn't correspond.	Warning
PRESS ONLINE SW COLLATE FAIL	Varies	Varies	Memory overflow was occurred in the collate copy. Stays displayed until the [ONLINE] button is pressed.	Warning
☐ FILE ERASING	Varies	On	Indicates that a secret file is being erased.	Warning
☐ DELETING ENCRYPTED JOB	Varies	On	It indicates the deletion of encrypted authentication print job and saving of deletion request of file.	Warning
☐ ERASED DATA FULL	Varies	On	Indicates that a secret file waiting to be erased is full.	Warning
PRESS ONLINE SW PRINT RESTRICTED. JOB REJECTED	Varies	On	Notifies users that jobs have been cancelled because they are not permitted for printing. (Related to JobAccount). Stays displayed until the [ONLINE] button is pressed.	Warning
PRESS ONLINE SW LOG BUFFER FULL. JOB REJECTED	Varies	On	Notifies users that jobs have been cancelled because the log buffer is full. (Related to JobAccount.) Stays displayed until the [ONLINE] button is pressed.	Warning
PRESS ONLINE SW EXPIRED SECURE JOB	Varies	On	Indicates that an applicable job has been automatically deleted as the retention period for authentication printing has expired.	Warning

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
PRESS ONLINE SW FILE SYSTEM USE FAILED %FS_ERR%	Varies	On	A file system error is occurred, which is other than the file system fill or the sd card write protected. Operation that does not involve a sd card is available. nnn: An identifier to Error type (For details, see the overview chapter.) %FS_ERR% = 0 … GENERAL ERROR = 1 … VOLUME NOT AVAILABLE = 3 … FILE NOT FOUND = 4 … NO FREE FILE DESCRIPTORS = 5 … INVALID NUMBER OF BYTES = 6 … FILE ALREADY EXISTS = 7 … ILLEGAL NAME = 8 … CANT DEL ROOT = 9 … NOT FILE = 10 … NOT DIRECTORY = 11 … NOT SAME VOLUME = 12 … READ ONLY = 13 … ROOT DIR FULL = 14 … DIR NOT EMPTY = 15 … BAD SD CARD = 16 … NO LABEL = 17 … INVALID PARAMETER = 18 … NO CONTIG SPACE = 19 … CANT CHANGE ROOT = 20 … FD OBSOLETE = 21 … DELETED = 22 … NO BLOCK DEVICE = 23 … BAD SEEK = 24 … INTERNAL ERROR = 25 … WRITE ONLY	Warning
☐ %PUFLASH% FLASH ERROR	Varies	Varies	PU flush error (Error occurs during the alteration of PU farm or it failed in the alteration in PU flush of such as LED Head information.) %PUFLASH% PU TRAY2 TRAY3 (B840 only) DUPLEX (only on models of printers equipped with a duplex unit.)	Warning
PRESS ONLINE SW INVALID SECURE DATA	Varies	Varies	Indicates that a job has been deleted because corruption of data has been detected by the integrity verification in authentication printing.	Warning
PRESS ONLINE SW INVALID DATA	Varies	Varies	Invalid data was received. Press the On-line switch and eliminate the warning. Displayed when unsupported PDL command is received or a spool command is received without SD Card.	Warning

When the printer detects an irrecoverable error, it displays a service call error in the LCD like the one given below:

SERVICE CALL
nnn: error

Note! "nnn" is an error code.

When a service call error is issued, an error code is displayed in the lower line of the LCD, accompanied by the relevant error information. Be sure to make a note of this error information (numeric values representing an address, etc.) and communicate it to the related departments, since such information will be required for the subsequent trouble analysis/solution. The error codes and their meanings, as well as the related remedial methods, are given in Table 7-1-1 and 7-1-2.

Table 7-1-1 Operator Alarm

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
LOAD %MEDIA_SIZE% IN MP TRAY AND PRESS ONLINE SWITCH	On	Off	Manual paper feed is required. Manually insert the paper shown by %MEDIA_SIZE%. The unit of Custom paper size conforms to the specified (menu-set) display unit for the MP tray unless specified with a driver. With a unit specified for Custom paper size in a driver, the display shows a Custom paper size in the unit. Custom paper size is expressed by "<width> x <length> <unit>". Examples: 210 x 297 mm 8.5 x 11.0 inches	Error (ONLINE)
%TRAY% DUPLEX REQUEST	Varies	Blink	Paper feeding is reccomended because the print of back sides(odd number pages) is finished during the Manual Duplex print. %TRAY% Tray1 Tray2 Tray3 (B840 only) MP Tray	Error (ONLINE)
LOAD %MEDIA_SIZE%/ %MEDIA_TYPE% AND PRESS ONLINE SWITCH %ERRCODE%:%TRAY% MEDIA MISMATCH	Off	Blink	Indicates a mismatch between a tray media type and print data occurred. This display prompts loading paper in a tray. Error 461: TRAY1. Error 462: TRAY2. Error 463: TRAY3. (B840 only) The unit of Custom paper size conforms to the specified (menu-set) display unit for the MP tray unless specified with a driver. With a unit specified for Custom paper size in a driver, the display shows a Custom paper size in the unit. Custom paper size is expressed by "<width> x <length> <unit>". Examples: 210 x 297 mm 8.5 x 11.0 inches The user needs to press the [ONLINE] button after changing paper.	Error 461 462 463
LOAD %MEDIA_SIZE%/ %MEDIA_TYPE% AND PRESS ONLINE SWITCH %ERRCODE%:%TRAY% MEDIA MISMATCH	Off	Blink	Indicates a mismatch between a tray media type and print data occurred. This display prompts loading paper in a tray. Error 460: MP TRAY. The unit of Custom paper size conforms to the specified (menu-set) display unit for the MP tray unless specified with a driver. With a unit specified for Custom paper size in a driver, the display shows a Custom paper size in the unit. Custom paper size is expressed by "<width> x <length> <unit>". Examples: 210 x 297 mm 8.5 x 11.0 inche The user needs to press the [ONLINE] button after changing paper.	Error 460

Panel display □ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
LOAD %MEDIA_SIZE%/ %MEDIA_TYPE% AND PRESS ONLINE SWITCH %ERRCODE%:%TRAY% SIZE MISMATCH	Off	Blink	Indicates a tray paper size, or paper size, and a media type did not match. This display prompts loading paper in a tray. Error 461: TRAY1. Error 461: TRAY2. Error 463: TRAY3. (B840 only) The unit of Custom paper size conforms to the specified (menu-set) display unit for the MP tray unless specified with a driver. With a unit specified for Custom paper size in a driver, the display shows a Custom paper size in the unit. Custom paper size is expressed by "<width> x <length> <unit>". Examples: 210 x 297 mm 8.5 x 11.0 inches The user needs to press the [ONLINE] button after changing paper.	Error 461 462 463
LOAD %MEDIA_SIZE%/ %MEDIA_TYPE% AND PRESS ONLINE SWITCH %ERRCODE%:%TRAY% SIZE MISMATCH	Off	Blink	Indicates a tray paper size, or paper size, and a media type did not match. This display prompts loading paper in a tray. Error 460: MP TRAY. The unit of Custom paper size conforms to the specified (menu-set) display unit for the MP tray unless specified with a driver. With a unit specified for Custom paper size in a driver, the display shows a Custom paper size in the unit. Custom paper size is expressed by "<width> x <length> <unit>". Examples: 210 x 297 mm 8.5 x 11.0 inches The user needs to press the [ONLINE] button after changing paper.	Error 460
DOWNLOAD MESSAGE PROCESSING	Varies	Varies	Indicates that message data to be updated is being processed.	Error (ONLINE)
DOWNLOAD MESSAGE WRITING	Varies	Varies	Indicates that message data to be updated is being written.	Error (ONLINE)
DOWNLOAD MESSAGE SUCCESS	Varies	Varies	Indicates that message data to be updated has been written successfully.	Error (ONLINE)
DOWNLOAD MESSAGE FAILED %CODE%	Varies	Varies	Indicates wiring update message data succeeded. %CODE% identifies a decimal number (one digit) that indicates writing failed. =1: FAIL, which means no causes are known. =2: DATA_ERROR, which means a hash check error/flash memory error in writing data. =3: OVERFLOW, which means that, because flash memory became full in or during language file writing, downloading failed. =4: MEMORYFULL, which means making available memory space failed. =5: UNSUPPORTED DATA, which means downloading data unsupported by the printer.	Error (ONLINE)
NETWORK CONFIG WRITING	Varies	Varies	This appears during the NIC configuration data is storing into the flash memory, as the setting was changed.	Error (ONLINE)
WAIT A MOMENT NETWORK INITIAL	Varies	Varies	This appears when the NIC initialization is occurred, as the setting was changed.	Error (ONLINE)
LOAD %MEDIA_SIZE% %ERRCODE%:%TRAY% EMPTY	Off	Blink	Indicates a request for printing from an empty tray occurred. This display prompt loading paper. Error 491: TRAY1. Error 492: TRAY2. Error 493: TRAY3. (B840 only) The unit of Custom paper size conforms to the specified (menu-set) display unit for the MP tray unless specified with a driver. With a unit specified for Custom paper size in a driver, the display shows a Custom paper size in the unit.	Error 491 492 493

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
LOAD %MEDIA_SIZE% AND PRESS ONLINE SWITCH %ERRCODE%:MP TRAY EMPTY	Off	Blink	Indicates that, with the multi-purpose tray empty of paper, a request for printing from it occurred. The printer re-feeds paper Error 490: MP TRAY. The unit of Custom paper size conforms to the specified (menu-set) display unit for the MP tray unless specified with a driver. With a unit specified for Custom paper size in a driver, the display shows a Custom paper size in the unit.	Error 490
INSTALL PAPER CASSETTE %ERRCODE%:%TRAY% OPEN	Off	Blink	Indicates removal of the paper cassette of Tray 1 that is a paper path in attempting to print from Tray 2 or Tray 3 (B840 only). Error 440 : Tray1 Indicates removal of the paper cassette of Tray 2 that is a paper path in attempting to print from Tray 3 (B840 only). Error 441 : Tray2 (B840 only)	Error 440 441
INSTALL PAPER CASSETTE %ERRCODE%:%TRAY% MISSING	Off	Blink	Indicates that paper feed is unavailable in attempting to print from %TRAY% due to removal of the paper cassette of %TRAY%. %TRAY% Tray1 Tray2 Tray3 (B840 only)	Error 430 431 432
REMOVE PAPER %ERRCODE%:FACE DOWN STACKER	Off	Blink	The printed paper is overfilled on the paper stacker of the printer unit. Error 480 : Face Down Stacker	Error 480
ADD MORE MEMORY %ERRCODE%:MEMORY OVERFLOW	Off	Blink	Memory capacity overflows due to the following reason. Press ON-LINE switch so that it continues. Install expansion RAM or decrease the data amount. - Too much print data in a page. - Too much Macro data. - Too much DLL data.	Error 420
REPLACE EP-TONER %ERRCODE%:EP-TONER REGIONAL MISMATCH	Off	Blink	Indicates the EP toner cartridge is not for use in the printer. The printer recovers from the error after replacement of the EP toner cartridge with a EP toner cartridge for the printer.	Error 557
REPLACE EP-TONER %ERRCODE%: INCOMPATIBLE EP-TONER	Off	Blink	Indicates the EP toner cartridge is not for use in the printer. The printer recovers from the error after replacement of the EP toner cartridge with a EP toner cartridge for the printer.	Error 617
REPLACE EP-TONER %ERRCODE%: INCOMPATIBLE EP-TONER	Off	Blink	Indicates the EP toner cartridge is not for use in the printer. The printer recovers from the error after replacement of the EP toner cartridge with a EP toner cartridge for the printer.	Error 623
GENUINE EP-TONER IS RECOMMENDED %ERRCODE%:NON GENUINE EP-TONER	Off	Blink	Indicates the EP toner cartridge is not for use in the printer. The printer recovers from the error after replacement of the EP toner cartridge with a EP toner cartridge for the printer.	Error 553
INSTALL EP-TONER %ERRCODE%:EP-TONER MISSING	Off	Blink	Notifies the EP toner cartridge is not installed. Opening and closing the cover makes a try to recognize it, and if the EP toner cartridge has not been replaced, the status changes to Warning, and additional printing of up to 20 sheets of paper becomes available.	Error 613
CHECK EP-TONER %ERRCODE%:TONER SENSOR ERROR	Off	Blink	Something is wrong with the toner sensor. This status is indicated in Shipping Mode only. If the same error is detected in FACTORY Mode, it is indicated as service call of 163.	Error 543

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
OPEN FRONT COVER %ERRCODE%:PAPER SIZE ERROR	Off	Blink	Inappropriate size paper was fed from a tray. Check the paper in the tray or check for Multiple-feed. Open and close the cover to perform recovery printing, and continue.	Error 400
CHECK MP TRAY %ERRCODE%:PAPER JAM	Off	Blink	Paper jam occurred during paper feeding from tray. Error 390 : MP Tray	Error 390
OPEN FRONT COVER %ERRCODE%:PAPER JAM	Off	Blink	Paper jam occurred during paper feeding from tray. Error 391 : Tray1 Error 392 : Tray2 Error 393 : Tray3 (B840 only)	Error 391 392 393
OPEN FRONT COVER %ERRCODE%:PAPER JAM	Off	Blink	Jam has occurred in paper path. Error 380 : Feed	Error 380
OPEN TOP COVER %ERRCODE%:PAPER JAM	Off	Blink	Jam has occurred in paper path. Error 381 : Transport Error 382 : Exit Error 383 : Duplex Entry (only on models of printers equipped with a duplex unit) Error 385 : Around Fuser Unit Error 389 : Printing Page Lost	Error 381 382 383 385 389
OPEN DUPLEX COVER %ERRCODE%:PAPER JAM	Off	Blink	Jam has occurred nearby DUPLEX This error occurs in B840 or B820 only when equipped with a Duplex unit. Error 370 : Duplex Reversal Error 371 : Duplex Input Error 373 : Multifeed into Duplex	Error 370 371 373
OPEN FRONT COVER %ERRCODE%:PAPER JAM	Off	Blink	Jam has occurred nearby DUPLEX unit. This error occurs in B840 or B820 only when equipped with a Duplex unit. Error 372 : Misfeed from Duplex	Error 372
INSTALL DUPLEX UNIT %ERRCODE%:DUPLEX UNIT OPEN	Off	Blink	Duplex unit is removed. This error occurs in B840 or B820 only when equipped with a Duplex unit. When this error is detected, printing stops. This error occurs when the Duplex being connected as of power on is removed.	Error 360
REPLACE EP-TONER %ERRCODE%:EP-TONER LIFE	Off	Blink	Notifies the end of the EP toner cartridge life. Opening and closing the cover changes the status to Warning status. ------------------------------------- Internally, it indicates waste toner full. Opening and closing the cover makes a try to recognize it, and if the EP toner cartridge has not been replaced, the status changes to Warning, and additional printing of up to 20 sheets of paper becomes available.	Error 417
REPLACE EP-TONER %ERRCODE%:EP-TONER LIFE	Off	Blink	Notifies the end of the EP toner cartridge life. Opening and closing the cover changes the status to Warning status. ------------------------------------- Internally, it indicates toner has run out.	Error 413
REPLACE EP-TONER %ERRCODE%:EP-TONER LIFE	Off	Blink	Notifies the end of the EP toner cartridge life. Opening and closing the cover changes the status to Warning status. ------------------------------------- Internally, it indicates the end of the drum life.	Error 353
REPLACE EP-TONER %ERRCODE%:EP-TONER LIFE	Off	Blink	Notifies the end of the EP toner cartridge life. The error is displayed until the EP toner cartridge is replaced. ------------------------------------- Internally, the status changes from each of the following errors to complete stop. Error 413: Toner empty (Priority 347.7) Error 347: Waste toner full (Priority 347.5) Error 353: Drum life end (Priority 348)	Error 563

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
REPLACE FUSER %ERRCODE%:FUSER LIFE	Off	Blink	Notifies the fuser has reached its life. This is the error displayed based on the counter to indicate that the fuser has reached its life, and printing will stop. Warning status takes effect at Cover Open/Close. This error will occur on some user setting	Error 354
CHECK EP-TONER CARTRIDGE %ERRCODE%: IMPROPER LOCK LEVER POSITION	Off	Blink	Shows that the EP toner cartridge lever has not been locked.	Error 547
CHECK EP-TONER %ERRCODE%:EP-TONER MISSING	Off	Blink	The EP toner cartridge is not correctly installed.	Error 343
CHECK FUSER %ERRCODE%:FUSER MISSING	Off	Blink	The fuser unit is not correctly installed.	Error 320
CLOSE COVER %ERRCODE%:COVER OPEN	Off	Blink	The cover is open. Error 310 : Top Cover Error 311 : Front Cover	Error 310 311
CLOSE COVER %ERRCODE%:DUPLEX COVER OPEN	Off	Blink	The cover is open. Error 316 : Duplex Unit	Error 316
WAIT A MOMENT DATA RECEIVE	Off	Blink	The printer is receiving the NIC download data.	Error
WAIT A MOMENT DATA RECEIVED OK	Off	Off	The printer finished receiving the NIC download data.	Error
CHECK DATA REC DATA ERROR <%DLCODE%>	Off	On	An error has happened while the printer is receive-processing the NIC download data. %DLCODE% 1: File size error 2: Check-sum error 3: Invalid printer model number 4: Invalid module I/F version 5: Invalid FAT version	Error
WAIT A MOMENT DATA WRITING	Off	Blink	The printer is writing the NIC download data.	Error
POWER OFF/ON DATA WRITTEN OK	Off	Off	The printer finished writing the NIC download data.	Error
CHECK DATA DATA WRITE ERROR <%DLCODE%>	Off	On	An error has happened while the printer is writing the NIC download data. %DLCODE% 1: Memory allocation error 2: Download file error 3: Device allocation error 4: No device space 5: File writing failure 6: CU-F/W mismatch	Error
REBOOTING %CODE%	Off	On	Rebooting of the controller unit. %CODE% is a decimal value (one digit) and represents the reason to reboot. = 0 … Reboot due to a reason other than the followings. = 1 … Reboot due to PJLCommand. = 2 … Reboot in accordance with a menu change. = 3 … Reboot due to quit operator of PostScript Language. = 4 … reboot by Network Utility (including Web).	Error
SHUTTING DOWN	Off	Off	It is shown that a printer is shutting down. Shutdown processing is started with which press BACK button 4 seconds or more after the completion of initialization processing of a printer.	Error
SHUTDOWN	Off	Off	Indicates that the printer has completed shutting down.	Error
PLEASE POW OFF SHUTDOWN COMP	Off	Off	It is shown that the printer completed shutdown processing. (The backlight of LCD puts out the light)	Error
POWER OFF/ON %ERRCODE%: ERROR	Off	Blink	A fatal error occurred. For more information, see “Service Calls List.” The printer may recover by power off/on. Note: This status is available not in every language.	Fatal <nnn>

Panel display ☐ means no display in upper line.	LED		Detail	Solution
	Ready	Atten		
SERVICE CALL %ERRCODE%: ERROR	Off	Blink	A fatal error occurred. For more information, see "Service Calls List." Note: This status is available not in every language.	Fatal <nnn>
SERVICE CALL %ERRCODE%: ERROR *	Off	Blink	A fatal error occurred. For more information, see "Service Calls List." '*' represents detailed error information. Note: This status is available not in every language.	Fatal 096 231 128 168 169
POWER OFF/ON %ERRCODE%: ERROR nnnnnnnn nnnnnnnn nnnnnnnn	Off	Blink	A fatal error occurred. For more information, see "Service Calls List." 'nnnnnnnn' represents detailed error information. The printer may recover by power off/on. Note: This status is available not in every language	Fatal 002 ~011 F0C F0D FFE FFF
POWER OFF/ON %ERRCODE%: DOWNLOAD ERROR	Off	Blink	Downloading Media Table to PU has failed. (Related to CustomMediaType.) The printer may recover by power off/on. Note: This status is available not in every language.	Fatal 209

Table 7-1-2 Service Call Error List

Fatal No.	Display	Causes	Error detail		Actions
001	Service call 001:Error	Machine Check Exception	Machine Check Exception Hardware fault detected. (Board defectiveness or Shortage of power supply volume)		Replace the CU/PU board.
002 ≀ 006	Power off/on 002:Error ≀ 006:Error	CPU Exception	Does the error display reappear?	Yes No	Power OFF/ON Replace the CU/PU board.
009 ≀ 011	Power off/on 009:Error ≀ 011:Error	CPU Exception	Does the error display reappear?	Yes	Power OFF/ON Replace the CU/PU board.
020	Service call 020:Error	CU ROM Hash Check Error	Does the error display reappear?	Yes	Power OFF/ON Replace the CU/PU board.
024	Service call 024:Error	CU Font ROM Hash Check Error	Does the error display reappear?	Yes	Power OFF/ON Replace the CU/PU board.
025	Service call 025:Error	CU Font ROM Hash Error	Font ROM_DIMM Hash Check error was detected. (Supported only on printers for Japan)	Yes	Power OFF/ON Replace the CU/PU board.
030	Service call 030:Error	CU RAM Check Error	Does the error display reappear?	Yes	Power OFF/ON Replace the CU/PU board.
031	Service call 031:Error	CU Optional RAM Check Error	Is the RAM DIMM set properly? Is the error corrected by replacing the RAM DIMM?	No Yes No	Reset the RAM DIMM. Replace the program RAM DIMM. Replace the CU/PU board.
036	Service call 036:Error	RAM Spec error: The CU RAM DIMM spec is not supported.	Is the RAM DIMM genuine? Is the corresponding RAM DIMM implemented properly? Does replacing the corresponding RAM DIMM correct it?	No No Yes No	Use a genuine RAM DIMM. Re-implement the corresponding RAM DIMM. Replace the program RAM DIMM. Replace the CU/PU board.
040	Service call 040:Error	CU EEPROM Error	Does the error display reappear?	Yes	Power OFF/ON Replace the CU/PU board.
042 043 045	Service call 042:Error ≀ 043:Error 045:Error	Flash File System Error	Failed to access the Flash set directly on the CU/PU board.		Run forced initialization of the Flash. (Note that the NIC-F/W and so on are deleted. After the initialization, it is necessary to download a NIC-F/W and so on by the maintenance utility.) Execute FLASH FORMAT of MAINTENANCE MENU of the system maintenance menu. Release buttons when FLASH FORMAT appears, wait until ONLINE is displayed (about 2 minutes), and if the symptom remains, replace the IZA board.

Fatal No.	Display	Causes	Error detail		Actions
049	Service call 049:Error	CU Engine Type Mismatch	1) The CU F/W recognized that a ROM for 600-dpi machines was installed on a 1200-dpi machine (PX713). 2) The EFI controller detected a 600-dpi head (PX723/743). 3) The head resolution supported by the CU F/W doesn't match the head resolution detected by the PU F/W (PN286 and later).		
052	Power off/on 052:Error	DMA Abort Error detected in Image processor.	Does the error display reappear?	Yes	Power OFF/ON Replace the CU/PU board.
067	Service call 067:Error	A communication error with the Sleep Mode interface monitoring program was detected.	If restoring the power doesn't solve the problem, maintenance by service personnel is required.	Yes	Power OFF/ON Replace the CU/PU board.
068	Service call 068:Error	No Sleep Mode interface monitoring program was found.	It requires program writing by service personnel.		
069	Service call 069:Error	NIC chip error is detected.	NIC Chip Error		If restoring the power doesn't solve the problem, replacement of the board is required.
070	Power off/on 070:Error	PSE firmware fault detected.	Does the error reoccur?	Yes	Power OFF/ON Replace the CU/PU board.
072	Power off/on 072:Error xx	Engine I/F Error I/F error between PU-CU.	Is the CU assembly set properly?	No Yes	Set properly. Replace the CU/PU board.
073	Power off/on 073:Error xxxxxxxx	Video Error Fault detected when image data is extended. (Invalid data was received.)	Is the CU assembly set properly? Does the error display reappear?	No Yes Yes	Set properly. Execute printing again on a higher spec PC or at a lower resolution. Replace the CU/PU board.
					Replace the interface cable. Re-install the PC printer driver.
			Is the CU assembly set properly? Does the error display reappear? Is the error dependent on print data?	No Yes Yes No Yes	Set properly. Print it again. Print another data. Replace the CU/PU board. Ask a design dept to analyze the data.
074 075	Power off/on 074:Error xxxxxxxx 075:Error xxxxxxxx	Video Error Fault detected when image data is extended.	Is the CU assembly set properly?	No Yes	Set properly. Replace the CU/PU board.

Fatal No.	Display	Causes	Error detail		Actions
077	Power off/on 077:Error	Video extension error was detected.	Is the CU assembly set properly?	No	Set properly.
				Yes	Execute printing again on a higher spec PC or at a lower resolution.
			Does the error display reappear?	Yes	Replace the CU/PU board.
081	Service call 081:Error	Parameter consistency check error	EEPROM or Flash became incapable of reading or writing properly.		If switching off and on doesn't solve the problem, replacement of the CU board is required.
104	Service call 104:Error	Engine EEPROM setting check is OK when power ON. Then detect a read/write error.			Power OFF/ON
			Does the error display reappear?	Yes	Replace the CU/PU board.
106	Service call 106:Error	Abnormal engine control logic			Power OFF/ON
			Does the error display reappear?	Yes	Replace the CU/PU board.
111	Service call 111:Error	Detected illegal Duplex Unit.	Is Duplex Unit for the model installed?	No	Install correct Duplex Unit for the model.
112	Service call 112:Error	Detected illegal 2nd Unit.	Is 2nd Tray for the model installed?	No	Install correct 2nd Tray for the model.
113	Service call 113:Error	Detected illegal 3rd Unit.	Is 3rd Tray for the model installed?	No	Install correct 3rd Tray for the model.
121	Service call 121:Error	High-voltage power supply I/F error	Is the cable between the CU/PU board and the high-voltage power supply unit connected properly?	No	Connect properly.
			Is there no improper connection?	Yes	Check the high-voltage power supply unit for improper connection.
				No	Replace the high-voltage power supply unit.
122	Service call 122:Error	Low-voltage power supply fan error	Is the fan in the low-voltage power supply unit operating?	No	Check the connection of the fan connector.
			Is the fan connector connected properly?	No	Replace the fan motor.
				Yes	Replace the CU/PU board.
123	Service call 123:Error	Abnormal environment humidity /Not connected humidity sensor.			Power OFF/ON
			Does the error display reappear?	Yes	Replace the operator panel board.
124	Service call 124:Error	Abnormal environment temperature			Power OFF/ON
			Does the error display reappear?	Yes	Replace the operator panel board.
127	Service call 127:Error	Error detected at the fuser unit cooling fan.	Is the fan connector connected properly?	No	Connect properly again.
				Yes	Replace the fuser fan.
			Does the error display reappear?	No	Replace the CU/PU board.
128	Service call 128:Error	Error detected at the suction fan.	Is the fan connector connected properly?	No	Connect properly again.
				Yes	Replace the suction fan.
			Does the error display reappear?	No	Replace the CU/PU board.
134	Service call 134:Error	LED head fault detected. (134 = K)	Is the LED head properly set?	No	Set properly for the LED head unit.
				Yes	Check the LED HEAD FUSE.
			Has the LED HEAD FUSE been cut?	Yes	Replace the FUSE.
				No	Turn the power on again.
			Does the error display reappear?	Yes	Replace LED head unit.

Fatal No.	Display	Causes	Error detail		Actions
153	Service call 153:Error	EP toner cartridge cannot be disconnected. (153 = K)	Is EP toner cartridge setting proper?	No	Reset the EP toner cartridge.
				Yes	Turn the power on again.
			Does the error reoccur?	Yes	After checking the connection of the cable between the IZT board and the CU/PU board, replace the IZT board.
			Is the error corrected by replacing the IZT board?	No	Replace the CU/PU board.
155	Service call 155:Error	Fuser unit fuse cannot be disconnected.	Is the fuser unit set properly?	No	After cleaning the fuser connector, reset.
				Yes	Turn the power on again.
			Does the error reoccur?	Yes	Check cable connections and replace the CU/PU board.
163	Service call 163:Error	Error detected by the toner sensor. (163 = K)	Is the EP toner cartridge set?	No	Set the EP toner cartridge.
			Is the toner lock lever set?	No	Turn the toner lock lever to a fixed position.
			Does the error reoccur?	Yes	Replace the toner sensor or assembly.
167	Service call 167:Error	Thermistor Slope Error	Does the error message reappear?		Restore the power.
			Does the error display reappear?	Yes	Leave the machine un-operated for 30 minutes, and then restore the power.
168	Service call 168:Error	Compensation Thermistor Error	Does the error message reappear?		Restore the power.
			Does the error display reappear?	Yes	Leave the machine un-operated for 30 minutes, and then restore the power.
169	Service call 169:Error	Upper Side Thermistor Error	Does the error message reappear?	Yes	Restore the power.
			Does the error display reappear?	Yes	Leave the machine un-operated for 30 minutes, and then restore the power.
170 171	Service call 170:Error 171:Error	Short circuit in the fuser thermistor or open detected.			Turn the power on again.
			Does the error reoccur?	Yes	Replace the fuser unit.
172 173	Service call 172:Error 173:Error	Abnormal temperature detected by the fuser thermistor (high-temp or low-temp)			Turn the power on again.
			Does the error reoccur?	Yes	Replace the fuser unit.
			Does the error reoccur?	Yes	Replace the low-voltage power supply unit.
181 182 183	Service call 181:Error 182:Error 183:Error	Option unit I/F error (181 = Duplex Unit, 182 = 2nd Tray, 183 = 3rd Tray)			Turn the power on again.
			Does the error reoccur?	Yes	After checking connection parts of the connector, replace the option unit.
				Yes	
187	Service call 187:Error	Engine Control Panel I/F Error	A problem was detected in communication with the Control Panel.		Turn the power on again.
			Does the error reoccur?	Yes	Replace the Control Panel board.
			Does the error reoccur?	Yes	Replace the CU/PU board.
190	Power off/on 190:Error	System Memory Overflow			Turn the power on again.
			Does the error reoccur?	Yes	Add an optional RAM DIMM.
203 204	Power off/on 203:Error 204:Error	An error was detected in the CU program. (203 and 204 do not occur in normal operation.)	An illegal operation was performed with the CU program.		Turn the power on again.
			Does the error reoccur?	Yes	Replace the CU/PU board.
207	Power off/on 207:Error				
208	Power off/on 208:Error				

Fatal No.	Display	Causes	Error detail		Actions
209	Power off/on 209: Download Error	Media Table download Error	Downloading Media Table to the PU has failed. (Related to Custom Media Type)		Turn the printer OFF/ON, and retry to download the PU firmware again. (Usually, the procedure isn't done, so this doesn't occur.)
213	Power off/on 213:Error	Engine Control Print Sequence Error	smaps3: Plain printing dropout (FSYNC OFF not detected with a plain to be printed out) smaps2: CU program failure (abnormal page control sequence in Engine Model)		Set properly. Execute printing again on a higher spec PC or at a lower resolution. Replace the CU/PU board.
					Replace the interface cable. Re-install the PC printer driver.
214	Power off/on 214:Error	An error was detected in the CU program. (214 does not occur in normal operation.)	An illegal operation was performed with the CU program.		Turn the power on again.
230	Service call 230:Error	Toner Tag Reader not installed	RFID read device error Does the error display reappear?		Check the connection of the RFID R/W board. Replace the RFID R/W board. Replace the CU/PU board.
231	Service call 231:Error	Toner Tag Reader I/F Error	An interface error was detected with the RFID reader device. 01: communication error between the RFID reader and the engine PCB. 02: the transceiver circuit error of the RFID reader. 03: communication error between the RFID reader and the Tag chip. 04: the RFID Tag detection error		01: Same as Error 230 02: Replace the RFID R/W board. 03: Check the connection of the antenna cable. 04: Check if the quantity of EP toner cartridges is correct.
250	Service call 250:Error	Secure File Erasing Error	An erasing error for encrypted files was detected. Did the user consent to do SD ERASE?	Yes	Notify users that they need to execute SD Card ERASE to erase encrypted files and get the SD Card back to the state when it was purchased. [ADMIN MENU] - [FILE SYS MAINTE1] - [SD INITIALIZE]
251	Service call 251:Error	Secure SD Card Erasing Error	An error was detected during SD Card ERASE. Does the error display reappear?		Turn the power on again. Replace the SD card.
254	Service call 254:Error	An unexpected error occurred during initialization of security mode. Error cause information is displayed after the error code number.	Does the error display reappear?	Yes	Turn the power on again. Create an encryption key again. If the problem remains, replace the CU board and the encrypted SD card.
255	Service call 255:Error	The encrypted board failed.			Replace only the encrypted board.
256	Service call 256:Error	An unsupported SD card was inserted. SD cards used must support a 48-bit address system and Ultra DMA Mode 4.			Insert an authorized SD card.

Fatal No.	Display	Causes	Error detail		Actions
257	Service call 257:Error	An unexpected error occurred during formatting of the SD card. Error cause information is displayed after the error code number.	Does the error display reappear?	Yes	Turn the power on again. Format the SD card again. If the problem remains, replace the SD card.
901 902	Power off/on 901:Error 902:Error	Short or open internal thermistor detected.	Is Internal thermistor cable setting proper? Does the error reoccur?	No Yes Yes	Connect the cable again to be set properly. Turn the power on again. Replace the Internal thermistor.
903 904	Power off/on 903:Error 904:Error	Abnormal temperature detected by the internal thermistor (high-temp or low-temp)	Is Internal thermistor cable setting proper? Does the error reoccur?	No Yes Yes	Connect the cable again to be set properly. Turn the power on again. Replace the thermistor and leave aside for 30 min. Then turn the power ON again.
918	Power off/on 918:Error	Duplex FAN Alarm Detection	A duplex unit FAN error Does the error reoccur after power is restored?	 Yes Yes	Check the duplex unit for proper installation. Check the FAN for proper connection. Replace the duplex fan.
923	Power off/on 923:Error	Image Drum Lock Error	The ID isn't rotating properly. Does the error reoccur after power is restored?	 Yes Yes	Check the EP toner cartridge for proper setting. Replace the EP toner cartridge. Replace the main motor.
982	Service call 982:Error	Any excessive additional tray was detected.	Any excessive additional tray was detected.		Remove any additional tray exceeding the designated number of trays that can be stacked.
984	Service call 984:Error	An unsupported toner cartridge was detected.	A tag in a format not corresponding to the K toner location was detected.		Replace it with a correct EP toner cartridge.
999	Service call 999:Error	There is a problem with the compatibility of the CU/ PU firmware (only during development).	An interim measure for design changes in models being developed		As a rule, it doesn't occur after FCS. It is necessary to upgrade the CU F/W or PU F/W to compatible ones.
0xF0C	Power off/on F0C:Error	An error was detected in the CU program.	An illegal operation was performed with the CU program.		After turning off the power, check the CU/PU board connection, and restore the power.

Note! SERVICE CALL Error 168, Error 171, Error 903, and Error 904 are likely issued when the printer is cool at 0 deg.C or lower. Therefore, if the printer is cool, turn on the power again after it has warmed up.

7.5.2 Preparing for troubleshooting

(1) LCD Display Malfunction 149

- (1-1) Nothing is displayed in LCD. 149
- (1-2) The first line is black display in LCD 150
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(2) Irregular Operation of the device after turning on the power. 151

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- (2-2) Abnormal sound 151
- (2-3) Abnormal odor 152
- (2-4) Slow starting time 152

(3) Paper Feed Jam(Error 391:1st Tray) 160

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(4) Paper Feed Jam (Error 380) 161

- (4-1) Paper jam occurs right after turning the power 161
- (4-2) Paper jam occurs right after feeding paper 162

(5) Paper Feed Jam (Error 390:Multi-purpose Tray) 163

- (5-1) Paper feed jam occurs right after turning on the power (Multi-purpose Tray) 163
- (5-2) Paper feed jam occurs right after paper feeding starts (Multi-purpose Tray) 163

(6) Paper Path Jam(Error 381) 164

- (6-1) Paper path jam occurs right after turning on the power 164
- (6-2) Paper path jam occurs right after feeding paper 165
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- (6-4) Paper path jam occurs right after reaching the fuser unit 166

(7) Paper Exit Jam(Error 382) 167

- (7-1) Paper exit jam occurs right after turning on the power 167
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(8) Duplex Print Jam(Error 370, 371, 372, 373, 383) 168

- (8-1) Duplex print jam occurs right after turning on the power 168
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(9) Paper Size Error (Error 400) 170

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(10) Fuser Unit Error(Error 170-173) 170

- (10-1) An error occurs right after turning on the power 170
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(11) Motor Fan Error(Error 122, 127, 128) 171

- (11-1) Low voltage power unit fan, fuser fan, suction fan does not rotate right after turning on the power 171
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(12) Print Speed is Slow (Low Performance) 172

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(13) Option unit is not recognized 172

- (13-1) Duplex unit is not recognized 172
- (13-2) 2nd Tray unit is not recognized 172
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- (14-1) Service Call 134(LED HEAD Missing) 173

(15)EP toner cartridge is not recognized(Error 343, 543, 547) 173

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(16) Fuse Cutout Error (Error 150-155) 174

- (16-1) Fuse cutout errors 174

(17) Connection Diagram 175

Note! When the CU/PU PCB is replaced, first read the data of the EEPROM chip of the old PCB, and then, copy it to the new PCB after the replacement. (See 5.4.1 Precautions on the replacement of engine control PCB).

7.5.2.(1) LCD Display Malfunction

Memo For numbers of (1) through (26) after each connector name, refer to 7.5.2 (17) "Connection Diagrams".

(1-1) Nothing is displayed in LCD

Confirmation Items	Confirmation Tasks	Action at NG
(1-1-1) Confirm fuse		
F7, F8 (fuse) of CU/PU PCB	Check to see if F7, F8 is blown out.	Replace F7, F8 or CU/PU PCB.
(1-1-2) Confirm connection systems		
Connection between low voltage power supply unit and CU/PU PCB	Check to see if the cord from the low-voltage power supply is connected properly to the POWER connector ⑩ of the CU/PU PCB. Check for any incomplete connection or skew insertion.	Redo the insertion of the cord properly
Cord ASSY interconnecting the low-voltage power supply unit and the CU/PU PCB	Check to see if the cord has any wire breakage. Check to see if the cord has any peel-off of the covering. Check for any fault in the cord ASSY, such as dislocated wire, etc.	Replace the cord with a normal one.
Connection between CU/PU PCB and operator panel PCB	Check to see if the 12-pin FFC is properly plugged into the OPE connector ⑰ of the CU/PU PCB. Check to see if the 12-pin FFC is properly plugged into the CN connector ⑲ of the operator panel PCB. Check for any incomplete connection or skew insertion.	Redo the insertion of the cord properly.
FFC interconnecting the CU/PU PCB and the operator panel PCB	Check for wire breakage with a circuit-tester. Also, check visually for peel-off of the covering.	Replace the FFC with a normal one.
(1-1-3) Confirm the power systems		
AC power supplied to the printer	Check the supply voltage of the AC power.	Supply AC power.
5V power supplied to the CU/PU PCB	Check the 5V power at pin1, pin2, pin3 of the POWER connector ⑩ of the CU/PU PCB.	Replace the low voltage power supply.
5V power supplied to the operator panel PCB	Check the 5V power at pin5 of the CN connector ⑲ of the operator panel PCB.	Replace the F5 or CU/PU PCB.
(1-1-4) Confirm the power short		
5V power and 24V power supplied to the CU/PU PCB	Check for short-circuiting through the POWER connector ⑩ of the CU/PU PCB. 7, 8, 9 pin: 24V 1, 2, 3 pin: 5V 4, 5, 6 pin: 0VL 10, 11, 12 pin: 0VP If there is any short-circuiting, locate it by isolation. Unplug the cords connected to the CU/PU PCB, one by one, and locate the short-circuited part.	Replace the short circuited part.

(1-2) The first line is black display in LCD

Confirmation Items	Confirmation Tasks	Action at NG
(1-2-1) Check of connections		
Connection between low voltage power supply unit and CU/PU PCB	Check to see if the cord from the lower-voltage power supply is connected properly to the POWER connector ⑩ of the CU/PU PCB. Check for any incomplete connection or skew insertion.	Redo the insertion of the cord properly.
Cord ASSY interconnecting the low-voltage power supply unit and the CU/PU PCB	Check to see if the cord has any wire breakage. Check to see if the cord has any peel-off of the covering. Check for any fault in the cord ASSY, such as dislocated wire, etc. Check to see if the wires are properly connected on a 1-pin to 1-pin basis.	Replace the cord with a normal one.
Connection between CU/PU PCB and operator panel PCB	Check to see if the 12-pin FFC is properly plugged into the OPE connector ⑰ of the CU/PU PCB. Check to see if the 12-pin FFC is properly plugged into the CN connector ⑲ of the operator panel PCB. Check for any incomplete connection or skew insertion.	Redo the insertion of the cord properly.
FFC interconnecting the CU/PU PCB and the operator panel PCB	Check for wire breakage with a circuit-tester. Also, check visually for peel-off of the covering.	Replace the FFC with a normal one.
(1-2-2) Check of LSI operation		
I/F signal from CU/PU PCB to operator panel PCB	Check to see if there is signal output through the OPE connector ⑰ of the CU/PU PCB. Pin4: CLK Pin7: Transmitting data (Transmission of CU/PU PCB) Pin9: CLR The signal is permanently output if the PCB is normal.	Replace the operator panel PCB.
I/F signal from operator panel PCB to CU/PU PCB	Check to see if there is signal output through the OPE connector ⑰ of the CU/PU PCB. Pin6: Receiving data (Reception of CU/PU PCB) The signal is permanently output if the PCB is normal.	Replace the operator panel PCB.

(1-3) PLEASE WAIT

(The display changes to “COMMUNICATION ERROR” if you leave them as they are)

Confirmation Items	Confirmation Tasks	Action at NG
(1-3-1) Execution of upgrading of PU firmware version		
Upgrading of PU firmware version	This indication will be produced following upgrading of the PU firmware version. Verify the PU version by conducting Menu Print or using the maintenance function.	If the error recurs even after the power is turned on again, conduct the checking of (1-3-2).
(1-3-2) Replace the CU/PU PCB		

(1-4) An error message related to the operation panel is displayed.

Confirmation Items	Confirmation Tasks	Action at NG
(1-4-1) Error messages		
Error messages	Check the details in the Error Message Table.	Follow the instructions.

(1-5) "RAM CHECK" or "INITIALIZING" are displayed

Confirmation Items	Confirmation Tasks	Action at NG
(1-5-1) Indications on the operator panel freeze.		
Operator panel indications	The indication of "RAM CHECK" or "INITIALIZING" remains on permanently.	Replace the CU/PU PCB.

7.5.2.(2) Irregular Operation of the device after turning on the power

(2-1) No operation

Confirmation Items	Confirmation Tasks	Action at NG
(2-1-1) Check of parts related to power supply		
AC power supplied to the printer	Check the supply voltage of the AC power.	Supply AC power.
5V and 24V power supplied to the CU/PU PCB	Check the power through the POWER connector ⑩ of the CU/PU PCB. 7, 8, 9 pin: 24V 1, 2, 3 pin: 5V 4, 5, 6 pin: 0VL 10, 11, 12 pin: 0VP	Replace the low voltage Power supply.
(2-1-2) Check of connections		
Connected state of operator panel	Check the items of (1-1). The operator panel needs to be detected and start operating, so that the printer functions.	Follow the description of (1-1).

(2-2) Abnormal sound

Confirmation Items	Confirmation Tasks	Action at NG
(2-2-1) Check for motor step-out (Abnormal driver)		
Operating state of motors	Use the self-diagnostic mode to check to see if the motors are operating normally. Check in the presence and absence of a load. If abnormal, the motors will emit a "boo".	Replace the CU/PU PCB.
State of motor cords	Check the laying of motor cords. Check visually, and also check for short-circuiting with a circuit-tester. Disconnect the motor cord on the PCB side, and check the resistance between each pin of the disconnected cord side and the FG. Replace the motor cord.	Redo the laying of the cord properly.
(2-2-2) Check for motor step-out (Loading problem of consumables)		
Operating state of motors	Use the self-diagnostic mode to check to see if the motors are operating normally. Check in the presence and absence of a load. If abnormal, the motors will emit a "boo". To isolate the cause, make prints using other consumable. Note) To use a new consumable on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the co-rresponding consumable.
(2-2-3) Check for gear tooth skip (Loading problem of consumables)		
Operating state of motors	Use the self-diagnostic mode to check to see if the motors are operating normally. Check in the presence and absence of a load. If abnormal, the motors will emit "pup, pup". To isolate the cause, make prints using other consumable. Note) To use a new consumable on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the corresponding consumable.
Installed state of consumables	Visually check to see if the consumables are installed in the prescribed positions where their gears are engaged.	Replace or modify the necessary mechanical part.

Confirmation Items	Confirmation Tasks	Action at NG
(2-2-4) Check of laying of cords		
Laying of peripheral cords around each cooling FAN	Check to see if the peripheral cords of the FAN are laid so poorly that the FAN blades are touching the cords. If the cords are laid improperly, "cluck, cluck" will be heard.	Correct the laying of cords.
(2-2-5) Check of installed state of mechanical parts		
Check the installed state of mechanical parts to the sheet metal under the CU/PU PCB.	Check visually if they are screwed to the sheet metal properly.	

(2-3) Abnormal odor

Confirmation Items	Confirmation Tasks	Action at NG
(2-3-1) Location of source of foul smell		
Fuser unit	Take out the fuser unit, and check for the smell.	Conduct (2-3-2).
Low voltage power supply unit	Take out the lower-voltage power supply unit, and check for the smell.	Replace the low voltage power supply unit.
(2-3-2) Check of state of Fuser unit		
Life count of fuser unit	Check the life count of the fuser unit in the self-diagnostic mode.	If the unit is like-new, it necessarily emits some foul smell.
Check for foreign matter in fuser unit	Check for any foreign matter trapped in the fuser unit, such as a paper chip.	Remove the foreign matter.

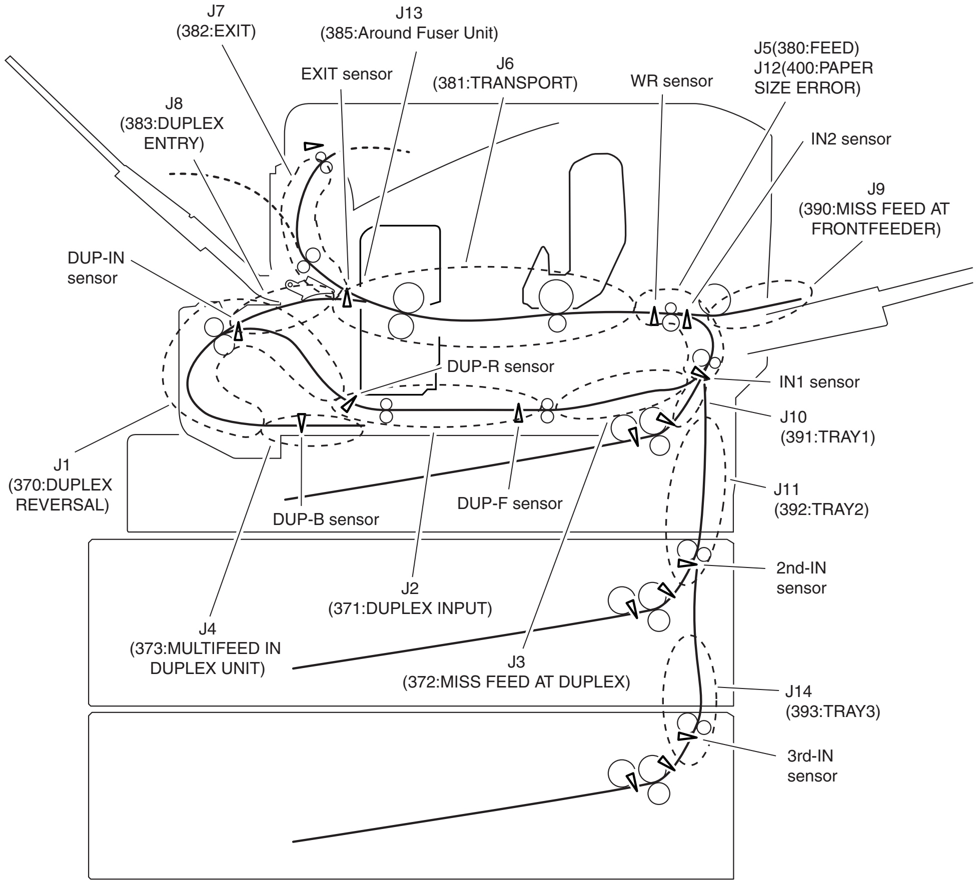
(2-4) Slow starting time

Confirmation Items	Confirmation Tasks	Action at NG
(2-4-1) Check of fuser unit		
Halogen lamp	Check the label on the back of the fuser unit to make sure that the voltage of the lamp is 230V.	Replace the fuser unit.

(3) Error number and jam location at paper jam

Error No.	Name	Reference	Corresponding Sensor	Jam Release Method
370	Duplex reversal	J1	DUP-IN, DUP-R	Jam release method ③
371	Duplex input	J2	DUP-F, DUP-R	Jam release method ③
372	Feed error at Duplex	J3	IN1	Jam release method ①
373	Multi-feed in Duplex Unit	J4	DUP-B	Jam release method ③
380	Feed	J5	IN2, WR	Jam release method ①
381	Transport	J6	IN1, IN2, WR, EXIT	Jam release method ②
382	Exit	J7	EXIT	Jam release method ②
383	Duplex entry	J8	EXIT, DUP-IN, DUP-R	Jam release method ②
385	Around Fuser Unit	J13	Fuser thermister	Jam release method ②
390	Feed error at front feeder	J9	IN2, WR	Jam release method ①
391	Tray1	J10	IN1	Jam release method ①, ④
392	Tray2	J11	2nd-IN	Jam release method ④
393	Tray3	J14	3rd-IN	Jam release method ④
400	Paper size error	J12	IN1	Jam release method ①
401	Paper size error			

Diagram of jam location


J7
(382:EXIT)
J13
(385:Around Fuser Unit)
EXIT sensor
J6
(381:TRANSPORT)
WR sensor
J5(380:FEED)
J12(400:PAPER SIZE ERROR)
J8
(383:DUPLEX ENTRY)
IN2 sensor
J9
(390:MISS FEED AT FRONTFEEDER)
DUP-IN sensor
DUP-R sensor
IN1 sensor
J10
(391:TRAY1)
J1
(370:DUPLEX REVERSAL)
J11
(392:TRAY2)
DUP-F sensor
DUP-B sensor
2nd-IN sensor
J2
(371:DUPLEX INPUT)
J4
(373:MULTIFEED IN DUPLEX UNIT)
J3
(372:MISS FEED AT DUPLEX)
J14
(393:TRAY3)
3rd-IN sensor

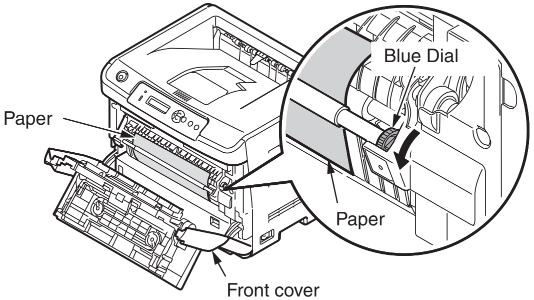
JAM RELEASE METHOD ①

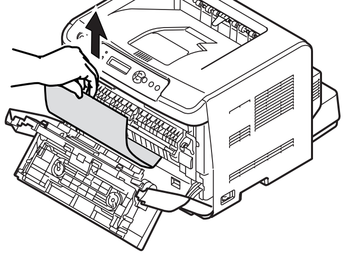
Removing the jammed paper

Front cover section (Codes: 372, 380, 390, 391, 400)

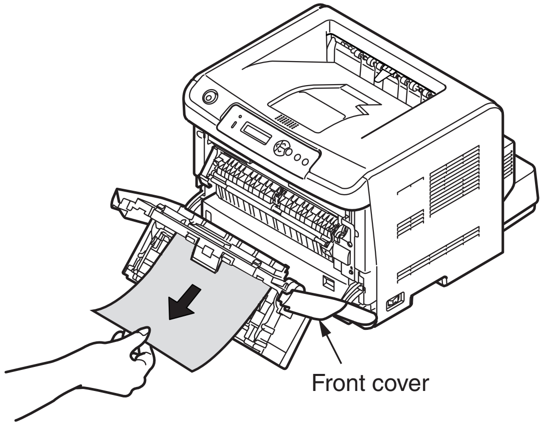
Open the front cover, and if the leading end or trailing end of the jammed paper is visible, pull out the paper slowly. If code 400 is issued, the paper may be unloaded automatically. If that is the case, opening and closing of the cover will clear the error.

If you see the top edge of paper





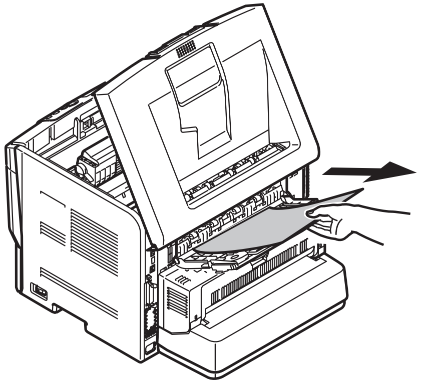
If you do not see the top edge of paper

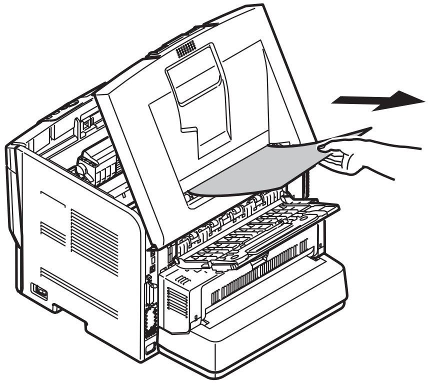


Paper Exit Part (Code: 382)

Pull out the jammed paper from the exit slowly.

Note! Even when paper is jammed in the delivery section, pull out the paper to the inside of the printer, if it is visible under the top cover. Forcing the paper out toward the rear could damage the fuser unit.





JAM RELEASE METHOD ②

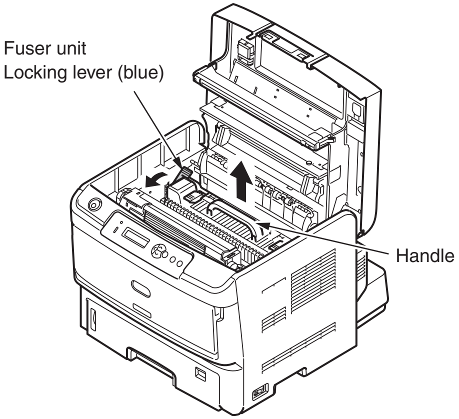
FUSER unit section (Codes: 382, 383, 385)

⚠Caution	Personal injuries may occur.	♨

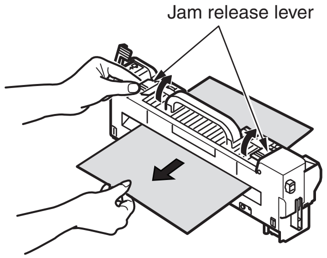
The fuser unit can be very hot. Be careful not to touch it. If the unit remains hot, do not hasten to work, but wait, until after the unit has cooled down a little, and then remove the paper.

(1) Raise the lock levers (blue) of the fuser unit in the direction of the arrows.

(2) Take out the fuser unit holding it by the handle, and place it on a flat table.

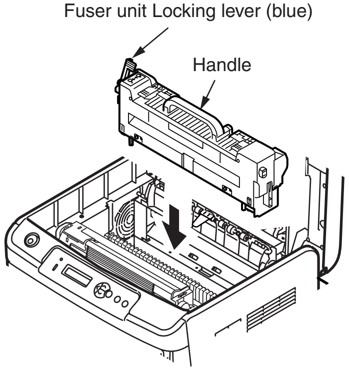


(3) Pull the jam release levers (two places) up and pull the jammed paper slowly in the arrow direction (toward you).



(4) Hold the fuser unit again by the handle and put it gently back in the printer.

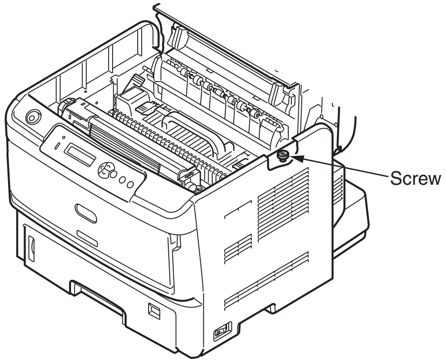
(5) Push the lock levers (blue) of the fuser unit toward the rear, and fasten the unit.



Note! After a jammed paper has been removed from the fuser unit section, unfixed toner may still remain inside the fuser unit. Therefore, execute the Menu Map print (Subsection 3.6), or print blank paper several times.

Paper path section (Codes: 381)

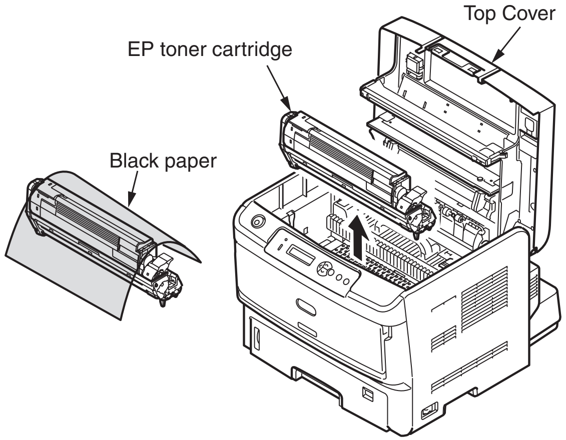
(1) Discharge static electricity by touching the screw by hand.



(2) Take out the image drum cartridges (4), and place them on a flat table.

(3) Cover the image drum cartridges thus taken out with a black sheet of paper.

Note!
- The image drums (green tubular parts) are extremely vulnerable. Use good caution in handling them.
- Do not expose the EP toner cartridges to direct sun or intense light (over approximately 1500 lux). Even under the room lighting, do not leave them exposed for five minutes or longer.

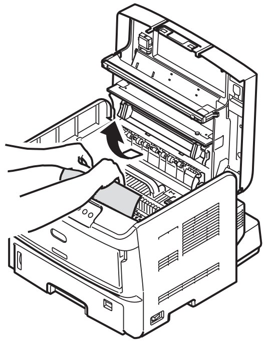


(4) Pull out the jammed paper slowly.

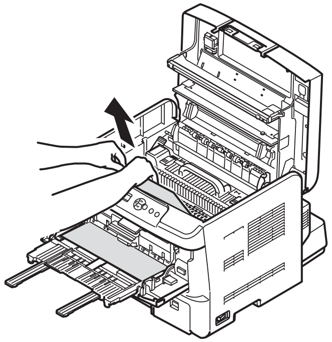
When the leading end of the paper is visible

Pull out the paper slowly to the inside of the printer.

Removal from Tray 1 to Tray 3

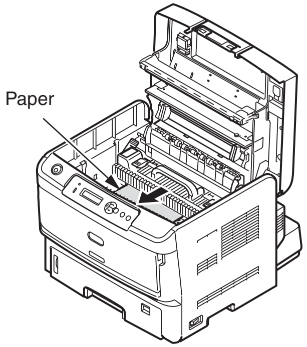


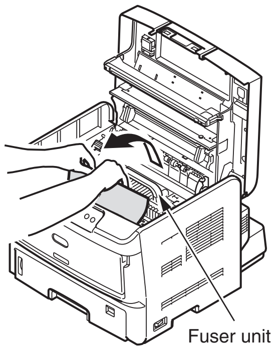
Removal from MP Tray



When neither the leading end nor the trailing end is visible

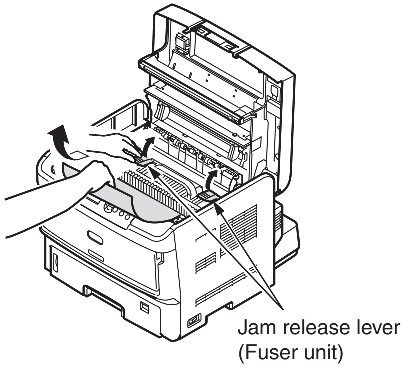
First slide the jammed paper into the direction of the arrow, and then, pull it out slowly.

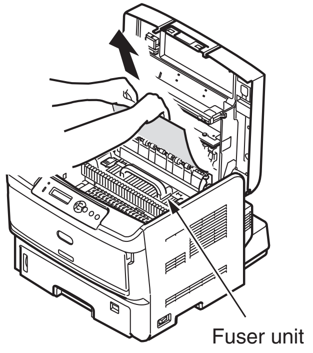




When the trailing end of the paper is visible

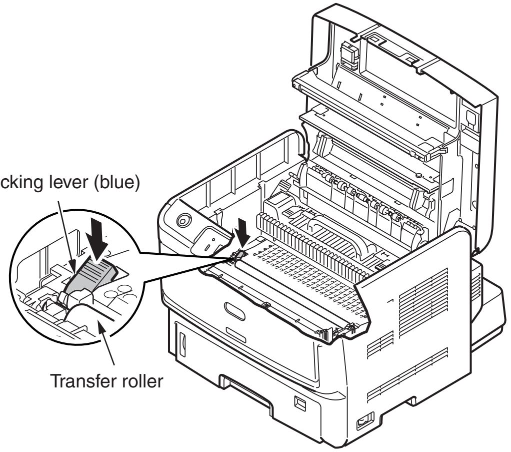
Pull the jam release levers (two places) on the fuser unit up and pull out the jammed paper.



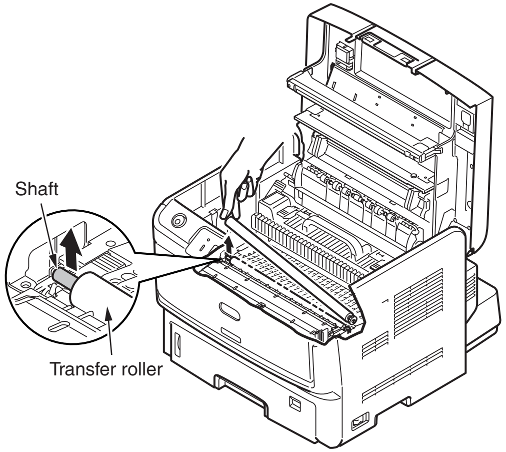


When paper jams on the transfer roller

① Push the lock lever (blue) in the direction of the arrow.



② Grasp the left shaft of the transfer roller and remove the transfer roller. If it isn't enough for easy removal, lift the gear on the right side as well.



③ Slowly pull out the jammed paper that is wrapping around the transfer roller.

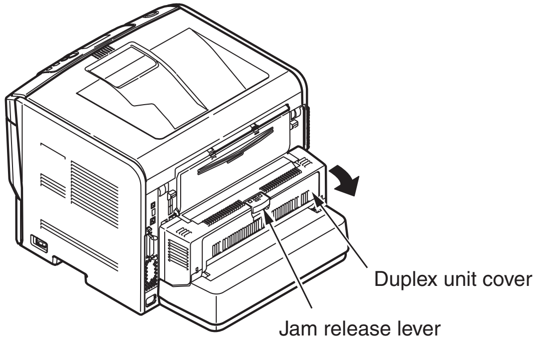
(5) Put the image drum cartridges back in place.

Note! • When toner adheres to the transparent film under the EP toner cartridge, wipe the toner with soft tissue paper.

JAM RELEASE METHOD ③

Duplex unit section (Codes: 370, 371, 373)

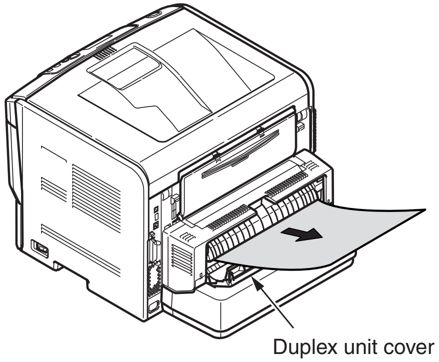
(1) Open the duplex unit cover by pushing the jam releasing lever of the duplex unit section.


Duplex unit cover
Jam release lever

(2) Take out the jammed paper.

If the paper is not visible, close the duplex unit cover briefly, and the paper will be unloaded automatically.

Note! If the duplex unit needs to be drawn out, turn off the power of the printer. (Turning off the printer cancels print jobs.)

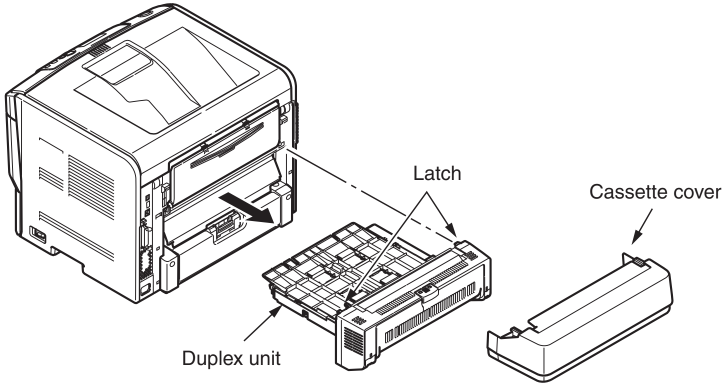

Duplex unit cover

When paper is not unload automatically, even if the duplex unit cover was closed.

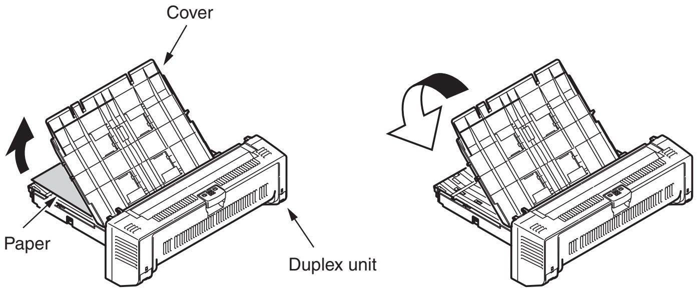
① Turn OFF the power of the printer.

② Pull out the jammed paper while keeping the duplex unit lifted.

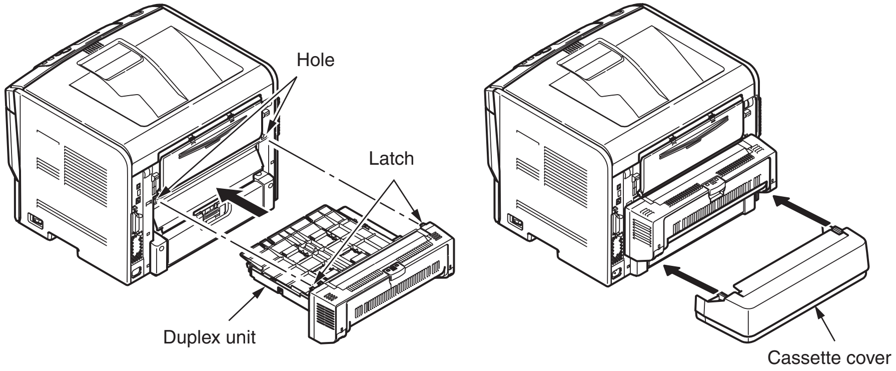
Note! The cassette cover comes off with the duplex unit.


Latch
Cassette cover
Duplex unit

③ Open the cover and check for any paper remaining in the duplex unit.


Cover
Paper
Duplex unit

④ Put the duplex unit and the cassette cover back into the printer.

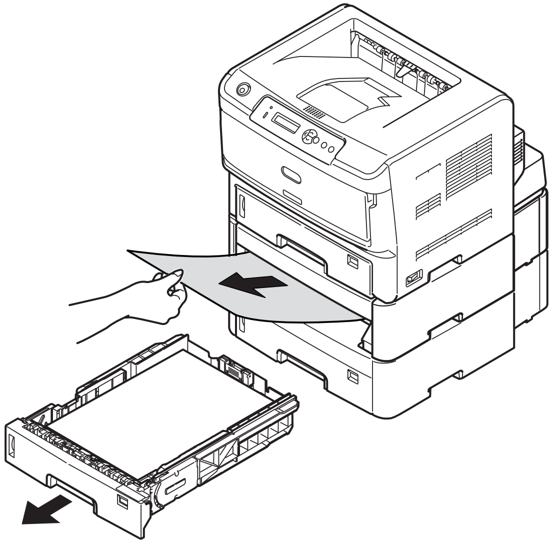

Hole
Latch
Duplex unit
Cassette cover

JAM RELEASE METHOD ④

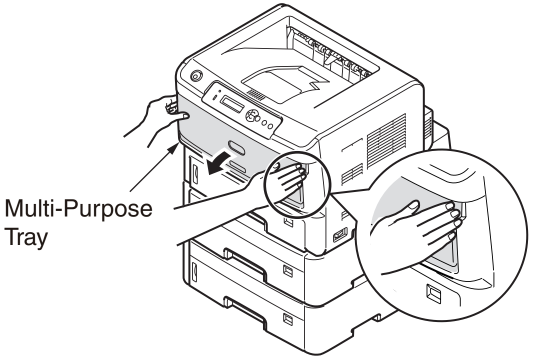
Second tray unit section (Optional)(Codes: 391, 392, 393)

(1) Draw out the paper cassette and remove the jammed paper.

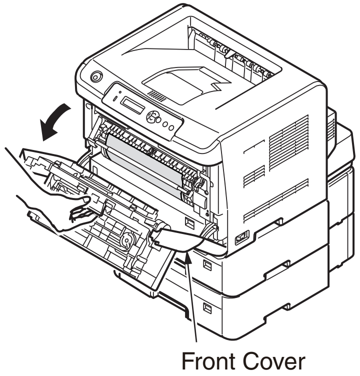
(392: Second Tray, 393 Third Tray)



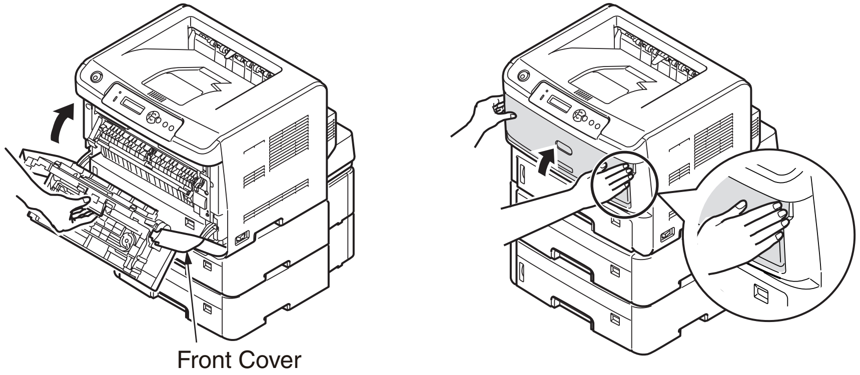
(2) After removing the jammed paper, open the MP tray.


Multi-Purpose
Tray

(3) Push up the handle (blue) in the center and open the front cover.


Front Cover

(4) Close the front cover and the MP tray.


Front Cover

7.5.2.(3) Paper Feed Jam(Error 391:1st Tray)

(3-1) Paper feed jam occurs right after turning on the power (1st Tray)

Confirmation Items	Confirmation Tasks	Action at NG
(3-1-1) Check of state of running route		
Paper running route in front unit	Open the front cover, and check to see if there is paper jammed on the running route.	Remove the jammed paper.
(3-1-2) Check of state of mechanical parts		
Check the sensor levers of IN1 sensor and IN2 sensor.	Check to see if the sensor levers demonstrate any abnormal shape or motion.	Replace the sensor lever with a normal one.
(3-1-3) Check of electrical parts		
Check the state of sensor signal detection.	Use the SWITCH SCAN function of the Maintenance Menu to check to see if the sensor signal is detected normally.	Replace the CU/PU PCB, front sensor PCB (RSF PCB) or the connection cord.
Check the output levels of IN1 sensor and IN2 sensor.	Check the following signals through the FSNS connector ⑯ of the CU/PU PCB. Pin4: IN1 sensor Pin3: IN2 sensor Confirm that the above signal levels vary as the sensor levers are actuated.	Replace the front sensor PCB (RSF PCB).
Check the power supply of the front sensor PCB (RSF PCB).	Check the 5V power through the FSNS connector ⑯ of the front sensor PCB (RSF PCB). Pin1: 5V power Pin5: 0VL	Replace the connection cord.

(3-2) Paper feed jam occurs right after paper feeding starts (1st Tray)

Confirmation Items	Confirmation Tasks	Action at NG
(3-2-1) Check of state of running route		
Paper running route in front unit	Check to see if there is paper jammed on the running route.	Remove the jammed paper.
(3-2-2) Check of state of mechanical parts		
Check the sensor levers of IN1 sensor and IN2 sensor.	Check to see if the sensor levers demonstrate any abnormal shape or motion.	Replace the sensor lever with a normal one.
Check the separator assemblies of the feed roller, the pickup roller and the tray.	Check if any foreign materials such as paper dust on the surface of the feed roller or of the pickup roller or not.	Remove the foreign material.
	Check if the feed roller or the pickup roller has worn out or not.	Replace the separator assemblies of the feed roller, pickup roller and tray.
(3-2-3) Check of operating state of motors		
Main motor	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check to see if the main motor operates normally.	Replace the CU/PU PCB or main motor.
(3-2-4) Check of connections		
Main motor drive cord	Check the connected state of the cord. Check for incomplete connection or skew insertion, and check the cord visually to see if it has any assembling problem.	Redo the connection properly. Replace the cord with a normal one.
Main motor	Check if the resistance at both ends of the fuse F1 of the main motor is 1Ω or less.	Replace the main motor.

Confirmation Items	Confirmation Tasks	Action at NG
(3-2-5) Check of operating state of clutch		
Hopping clutch	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check to see if the hopping clutch operates normally. Make this checking with the right side plate detached, so that the clutch is visible.	Replace the CU/PU PCB or hopping clutch.
(3-2-6) Check of connections		
Hopping clutch cord	Check the connected state of the cord. Check for any incomplete connection or skew insertion, and check the cord visually if it has any assembling problem.	Correct the connection properly. Replace the cord with a normal one.
Hopping clutch cord	Check to make sure that the cord is not caught under any assembled part of the printer. Unplug the HPPSZCL connector ⑭ of the CU/PU PCB, and confirm the following on the cord side: Short-circuiting between pin7 and FG Unplug the HPPSZCL connector ⑭, and check to see if there is a resistance of approximately 240Ω between pin7 and pin8.	Replace the clutch Assy and reassemble the device properly.

7.5.2.(4) Paper Feed Jam (Error 380)

(4-1) Paper feed jam occurs right after turning on the power

Confirmation Items	Confirmation Tasks	Action at NG
(4-1-1) Check of state of running route		
Paper running route in front unit	Check to see if there is paper jammed on the running route.	Remove the jammed paper.
(4-1-2) Check of state of mechanical parts		
Check the sensor levers of IN1 sensor, IN2 sensor and WR sensor.	Check to see if the sensor levers demonstrate any abnormal shape or motion.	Replace the sensor lever with a normal one.
(4-1-3) Check of electrical parts		
Check the state of sensor signal detection.	Use the SWITCH SCAN function of the maintenance menu to check to see if the sensor signal is detected normally.	Replace the CU/PU PCB, front sensor PCB (RSF PCB) or the connection cord.
Check the output levels of IN1 sensor, IN2 sensor and WR sensor.	Check the following signals through the FSNS connector ⑯ of the CU/PU PCB. Pin4: IN1 sensor Pin3: IN2 sensor Pin2: WR sensor Confirm that the above signal levels vary as the sensor levers are actuated.	Replace the front sensor PCB (RSF PCB).
Check the power supply of the front sensor PCB (RSF PCB).	Check the 5V power through the CN connector ⑯ of the front sensor PCB (RSF PCB). Pin1: 5V power Pin5: 0VL	Replace the connection cord.

(4-2) Paper feed jam occurs right after paper feeding starts

Confirmation Items	Confirmation Tasks	Action at NG
(4-2-1) Check of state of running route		
Paper running route in front unit	Check to see if there is paper jammed on the running route.	Remove the jammed paper.
(4-2-2) Confirm condition of mechanical parts		
Check the sensor levers of IN1 sensor , IN2 sensor and WR sensor.	Check to see if the sensor levers demonstrate any abnormal shape or motion.	Replace the sensor lever with a normal one.
(4-2-3) Check of the operating state of motors		
Hopping clutch Regist clutch Regist2 clutch	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check to see if the each clutch operates normally.	Replace the CU/PU PCB.
Hopping clutch Regist clutch Regist2 clutch	Unplug the HPPSZCL connector ⑭ of the CU/PU PCB, and confirm the following on the connector side. Regist clutch Several MΩ between pin3 and FG Regist2 clutch Several MΩ between pin5 and FG Hopping clutch Several MΩ between pin7 and FG	Replace the CU/PU PCB.
(4-2-4) Check the system connection		
Each clutch drive cord	Check the connection condition of the cables. Visually check for incomplete connection or skew insertion of the HPPSZCL connector ⑭ of the CU/PU PCB and for any assembly problem of each cord.	Normalize the connection condition. Replace the cable with the normal cable.
Each clutch drive cord	Check that any cable is not pinched during assembling of the printer. Remove the HPPSZCL connector ⑭ of the CU/PU PCB and check the followings at the cable side. Short circuit between pin3 and FG Short circuit between pin5 and FG Short circuit between pin7 and FG	Replace the cable with the good one that normalizes the connection condition.
Each clutch	Remove the HPPSZCL connector ⑭ of the CU/PU PCB and check the followings at the cable side. Regist clutch Approx. 192Ω between pin3 and pin4 Regist2 clutch Approx. 192Ω between pin5 and pin6 Hopping clutch Approx. 240Ω between pin7 and pin8	Replace the clutch.

7.5.2.(5) Paper Feed Jam (Error 390:Multi-purpose Tray)

(5-1) Paper feed jam occurs right after turning on the power (Multi-purpose Tray)

Confirmation Items	Confirmation Tasks	Action at NG
(5-1-1) Check of state of running route		
Paper running route in front unit	Check to see if there is paper jammed on the running route.	Remove the jammed paper.
(5-1-2) Check of state of mechanical parts		
Check the sensor levers of IN2 sensor and WR sensor.	Check to see if the sensor levers demonstrate any abnormal shape or motion.	Replace the sensor lever with a normal one.
(5-1-3) Check of electrical parts		
Check the state of sensor signal detection.	Use the SWITCH SCAN function of the self-diagnostic mode to check to see if the sensor signal is detected normally.	Replace the CU/PU PCB, front sensor PCB (RSF PCB) or the connection cord.
Check the output levels of IN2 sensor and WR sensor.	Check the following signals through the FSNS connector ⑯ of the CU/PU PCB. Pin2: WR sensor Pin3: IN2 sensor Confirm that the above signal levels vary as the sensor levers are actuated.	Replace the front sensor PCB (RSF PCB).
Check the power supply of the front sensor PCB (RSF PCB).	Check the 5V power through the CN connector ㉕ of the front sensor PCB (RSF PCB). Pin1: 5V power Pin5: 0VL	Replace the connection cord.

(5-2) Paper feed jam occurs right after paper feeding starts (Multi-purpose Tray)

Confirmation Items	Confirmation Tasks	Action at NG
(5-2-1) Check of state of running route		
Paper running route in multi-purpose	Check to see if there is paper jammed on the running route.	Remove the jammed paper.
Sheet receive of multi-purpose tray	Check to see if the sheet receive is always located in the upper position.	Modify the tray, so that the sheet receive will be raised to the prescribed position.
(5-2-2) Confirm condition of mechanical parts		
Check the sensor levers of IN2 sensor and WR sensor.	Check to see if the sensor levers demonstrate any abnormal shape or motion.	Replace the sensor lever with a normal one.
Front cover	Check to see if the right and left locks of the front cover are properly locked.	Replace the front cover Assy.
Check the paper feed roller and the pickup roller.	Check if any foreign materials such as paper dust on the surface of the feed roller or of the pickup roller or not.	Remove the foreign material.
	Check if the feed roller has worn out or not.	Replace the feed roller.

Confirmation Items	Confirmation Tasks	Action at NG
(5-2-3) Check of the operating state of motors		
MPT clutch Regist clutch Regist2 clutch	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check to see if the each clutch operates normally.	Replace the CU/PU board.
MPT clutch Regist clutch Regist2 clutch	Remove the MP1 connector ⑮ and the HPPSZCL connector ⑭ of the CU/PU PCB and check the followings on the connector side. MP1: Several MΩ between pin1 - FG : MPT clutch HPPSZCL: Several MΩ between pin3 - FG : Regist clutch Several MΩ between pin5 - FG : Regist2 clutch	Replace the CU/PU board.
(5-2-4) Check of connections		
Each clutch drive cord	Check a connection status of the cord. MP1 connector ⑭ of the CU/PU board. Check half connection, incomplete plug-in or installation status of the cord by eyes.	Correct the connection properly. Replace the cord with a normal one.
Each clutch drive cord	Check to make sure that the cord is not caught under any assembled part of the printer. Remove the MP1 connector ⑮ and the HPPSZCL connector ⑭ of the CU/PU PCB and check the followings on the cord side. MP1: Short circuit between pin1 - FG : MPT clutch HPPSZCL: Short circuit between pin3 - FG : Regist clutch Short circuit between pin5 - FG : Regist2 clutch	FG_Return the installation to a right status by exchanging a cord.
Each clutch	Remove the MP1 connector ⑮ and the HPPSZCL connector ⑭ of the CU/PU PCB and check the followings on the cord side. MP1: Approx. 240Ω between pin1-pin2:MPT clutch HPPSZCL: Approx. 192Ω between pin3-pin4:Regist clutch Approx. 192Ω between pin5-pin6:Regist2 clutch	Replace the clutch

7.5.2.(6) Paper Path Jam(Error 381)

(6-1) Paper path jam occurs right after turning on the power

Confirmation Items	Confirmation Tasks	Action at NG
(6-1-1) Check of state of running route		
Paper running route in front Unit.	Check to see if there is paper jammed on the running route.	Remove the jammed paper.
(6-1-2) Check of state of mechanical parts		
Check the sensor lever of WR sensor.	Confirm that there is no abnormality in the shape of the sensor lever and in the operation.	Replace the sensor lever with a normal one.
(6-1-3) Check of electrical parts		
Check the state of sensor signal detection.	Use the SWITCH SCAN function of the self-diagnostic mode to check to see if the sensor signal is detected normally.	Replace the CU/PU PCB, front sensor PCB (RSF PCB) or connection cord.
Check the output level of WR sensor.	Check the following signal through the FSNS connector ⑯ of the CU/PU PCB. Pin2: WR sensor Confirm that the above signal level varies as the sensor lever is actuated.	Replace the front sensor PCB (RSF PCB).
Check the power supply of the front sensor PCB (RSF PCB).	Check 5V power with CN connector ㉕ of a front sensor board (RSF PCB). pin1 : 5V Power pin5 : 0VL	Replace the connection cord.

(6-2) Paper path jam occurs right after feeding paper

Confirmation Items	Confirmation Tasks	Action at NG
(6-2-1) Check of state of running route		
Paper running route on the belt	Remove the EP toner cartridge and check the paper running route and the transfer roller for jammed paper.	Remove the jammed paper.
(6-2-2) Check of state of mechanical parts		
Check the sensor lever of WR sensor.	Check to see if the sensor lever demonstrates any abnormal shape or motion.	Replace the sensor lever with a normal one.
(6-2-3) Check of operating state of motors		
Hopping clutch Regist clutch Regist2 clutch Main motor	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check to see if the main motor operate normally. Make this checking in the presence and absence of a load.	If the main motor doesn't run, replace the main motor or the CU/PU PCB. If it runs normally only when the EP toner cartridge is removed, replace the EP toner cartridge.
Hopping clutch Regist clutch Regist2 clutch	Unplug the HPPSZCL connector ⑭ of the CU/PU PCB, and confirm the following on the connector side: Regist clutch Several MΩ between pin3 and FG Regist2 clutch Several MΩ between pin5 and FG Hopping clutch Several MΩ between pin7 and FG	Replace the CU/PU PCB.
(6-2-4) Check of connections		
Each clutch drive cord	Check the connection condition of the cables. Visually check for incomplete connection or skew insertion of the HPPSZCL connector ⑭ of the CU/PU PCB and for any assembly problem of each cord.	Normalize the connection condition. Replace the cable with the normal cable.
Each clutch drive cord	Check that any cable is not pinched during assembling of the printer. Remove the HPPSZCL connector ⑭ of the CU/PU PCB and check the followings at the cable side. Short circuit between pin3 and FG Short circuit between pin5 and FG Short circuit between pin7 and FG	Replace the cable with the good one that normalizes the connection condition.
Each clutch	Remove the HPPSZCL connector ⑭ of the CU/PU PCB and check the followings at the cable side. Regist clutch Approx. 192Ω between pin3 and pin4 Regist2 clutch Approx. 192Ω between pin5 and pin6 Hopping clutch Approx. 240Ω between pin7 and pin8	Replace the clutch.

(6-3) Paper path jam occurs in a path route

Confirmation Items	Confirmation Tasks	Action at NG
(6-3-1) Check of operating state of motors		
Hopping clutch Regist clutch Regist2 clutch Main motor	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check to see if the main motor operate normally. Make this checking in the presence and absence of a load.	If the main motor doesn't run, replace the main motor or the CU/PU PCB. If it runs normally only when the EP toner cartridge is removed, replace the EP toner cartridge.
Hopping clutch Regist clutch Regist2 clutch	Unplug the HPPSZCL connector ⑭ of the CU/PU PCB, and confirm the following on the connector side: Regist clutch Several MΩ between pin3 and FG Regist2 clutch Several MΩ between pin5 and FG Hopping clutch Several MΩ between pin7 and FG	Replace the CU/PU PCB.

(6-4) Paper path jam occurs right after reaching the fuser unit

Confirmation Items	Confirmation Tasks	Action at NG
(6-4-1) Check of operating state of motors		
Main motor	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check to see if the main motor operates normally. Make this checking in the presence and absence of a load. To isolate the cause, make prints using other fuser unit. Note) To use a new fuser unit on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the CU/PU PCB. Replace the Main motor. Replace the fuser unit.
(6-4-2) Temperature control of rotating roller		
Heat roller detection temperature	Check the detection temperature of the heat rollers in the self-diagnostic mode. Check to see if an abnormally low or high temperature is detected. To isolate the cause, make prints using other fuser unit. Note) To use a new fuser unit on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the fuser unit, or replace the CU/PU PCB.
(6-4-3) Check of installed state of fuser unit		
Fuser unit	Check to see if the fuser unit is properly installed (whether it is pushed in to the lowest position).	Install the unit properly in the printer.

7.5.2.(7) Paper Exit Jam(Error 382)

(7-1) Paper exit jam occurs right after turning on the power

Confirmation Items	Confirmation Tasks	Action at NG
(7-1-1) Check of state of running route		
Paper running route in delivery section	Check to see if there is paper jammed on the running route.	Remove the jammed paper.
(7-1-2) Check of state of mechanical parts		
Check the sensor lever of the delivery sensor	Check to see if the sensor lever demonstrates any abnormal shape or motion.	Replace the sensor lever with a normal one.
(7-1-3) Check of electrical parts		
Check the state of sensor signal detection.	Use the SWITCH SCAN function of the self-diagnostic mode to check to see if the sensor signal is detected normally.	Replace the CU/PU PCB or EXIT sensor or connection cord.
Check the output level of the EXIT sensor.	Check the following signal through the FESNS connector ⑧ of the CU/PU PCB. Pin2: EXIT sensor Confirm that the signal level varies as the sensor lever is actuated.	Replace the EXIT sensor.
(7-1-4) Check of connections		
EXIT sensor cord	Check to see if the cord is properly connected in the CU/PU PCB and EXIT sensor.	Correct the connection properly.
EXIT sensor cord	Check to see if the cords are caught under any other part, or have any peel-off of the covering or any assembling problem.	Replace the connection cord, or correct the assembling properly.

(7-2) Paper exit jam occurs right after feeding paper

Confirmation Items	Confirmation Tasks	Action at NG
(7-2-1) Check of state of running route		
Face-up stacker cover	Check to see if the cover is completely open or closed.	Eliminate imperfect opening or closing of the cover.
Duplex pull-in gate	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check to see if the Duplex pull-in gate operates normally. Make sure that it is duly on the exit side.	Replace the duplex pull-in gate or replace the duplex solenoid.
Rear panel	Check to see if the rear panel is installed properly, and if it is not obstructing the paper running route.	Redo the installation of the rear panel.
Running route in delivery section	Check visually for any load that obstructs running of paper along the route of the delivery section. Check to see if the delivery rollers are stiff in rotating.	Modify the load portion.
(7-2-2) Check of state of mechanical parts		
Sensor lever of exit sensor	Check to see if the sensor lever demonstrates any abnormal shape or motion.	Replace the sensor lever with a normal one.

7.5.2.(8) Duplex Print Jam(Error 370, 371, 372, 373, 383)

(8-1) Duplex print jam occurs right after turning on the power

Confirmation Items	Confirmation Tasks	Action at NG
(8-1-1) Check of state of running route		
Paper running route in duplex unit	Check to see if there is paper jammed on the running route. Open the front cover and see if there is paper jammed in the middle of feeding through the Duplex. Open the rear cover and see if there is paper jammed in the reversal path. Draw out the Duplex and see if there is paper jammed at the insertion inlet to the Duplex. Open the running path cover of the Duplex and see if there is paper jammed inside.	Remove the jammed paper.
(8-1-2) Check of state of mechanical parts		
Check the sensor levers of the sensors of Duplex.	Check to see if the sensor levers demonstrate any abnormal shape or motion.	Replace the sensor lever with a normal one.
(8-1-3) Check of electrical parts		
Check the state of sensor signal detection.	Use the SWITCH SCAN function of the self-diagnostic mode to check to see if the sensor signals are detected normally. Except for the Dup-In sensor, check the state of signal detection in two cases. With a sheet of paper placed inside the duplex unit and with the paper removed.	Replace the Duplex PCB (V7Y PCB), sensors or connection cord.

(8-2) Duplex print jam occurs in the Duplex entry

Confirmation Items	Confirmation Tasks	Action at NG
(8-2-1) Check of operating state of solenoid		
Duplex solenoid	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check the operating state of the Duplex solenoid.	Replace the V7Y PCB or solenoid.
Separator DUP (Delivery/ DUP-intake switching gate located immediately after fuser unit)	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check visually the motion of the gate (EXIT SOLENOID). See if its motion is stiff, or its amount of opening/closing is abnormal.	Replace the separator DUP.
On/off timing of duplex solenoid	Conduct test print with the cover open, and see if the separator DUP opens at the right timing.	Replace the WR sensor lever or solenoid.
(8-2-2) Check of operating state of sensor lever		
Dup-IN sensor lever	Open the rear cover, touch the Dup-IN sensor lever by hand, and see if its motion is stiff.	Replace the Dup-IN sensor lever.
Dup-IN sensor	Use the SWITCH SCAN function of the self-diagnostic mode to check to see if the sensor signals are detected normally.	Replace the duplex PCB (V7Y PCB), sensors or connection cord.
(8-2-3) Check of state of running route		
Reversal transport path	Check to see if there are paper chips, burrs or any other foreign matters in the reversal transport path that obstruct the running of paper.	Remove the foreign matters.

Confirmation Items	Confirmation Tasks	Action at NG
(8-2-4) Check of operating state of motor		
Duplex motor	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check the operation of the duplex motor. Make this checking by the rotation of the rollers, which are visible as the rear cover is opened.	Replace the V7Y PCB or the motor.
Duplex intake/reversal roller and its pinch roller	Check to see if the intake/reversal roller on the duplex unit side comes into contact with the pinch roller on the cover side when the rear cover of the Duplex is closed (Is the pinch roller also rotating when the duplex roller is turning?)	Replace the rear cover.

(8-3) Duplex print jam occurs in reverse of the paper

Confirmation Items	Confirmation Tasks	Action at NG
(8-3-1) Check of operating state of sensor lever		
Dup-IN sensor lever	Open the rear cover and touch the Dup-IN sensor lever by hand. Check to see if its motion is stiff.	Replace the Dup-IN sensor lever.
Dup-In sensor	Use the SWITCH SCAN function of the self-diagnostic mode to check to see if the sensor signals are detected normally.	Replace the duplex PCB (V7Y PCB), sensor or connection cord.
(8-3-2) Check of operating state of motor		
Duplex motor	Check visually to see if the paper has started reversal motion from the slit of the rear cover. If the reversal motion has not been started, check to see if the planetary gear in the duplex unit is stiff.	Replace the planetary gear.

(8-4) Duplex print jam occurs in the Duplex input

Confirmation Items	Confirmation Tasks	Action at NG
(8-4-1) Check of operating state of sensor levers		
Dup-R and Dup-F sensor levers	Remove the Duplex, and check the motions of the sensor levers.	Replace the sensor levers.
(8-4-2) Check of sensors		
Check the state of sensor signal defection.	Use the SWITCH SCAN function of the self-diagnostic mode to check to see if the sensor signals are detected normally. Except for the Dup-In sensor, check the state of signal detection in two cases. With a sheet of paper placed inside the duplex unit and with the paper removed.	Replace the duplex PCB (V7Y PCB), corresponding sensor or connection cord.

(8-5) Paper is not feed to a Regist roller from Duplex section

Confirmation Items	Confirmation Tasks	Action at NG
(8-5-1) Check the operational condition of the clutch		
Duplex clutch	Conduct the Motor and Clutch Test of the self-diagnostic mode, and check the operation of the duplex clutch.	Replace the V7Y PCB or the clutch.

7.5.2.(9) Paper Size Error (Error 400)

(9-1) Paper jam occurs when the end of paper is near IN1 sensor.

Confirmation Items	Confirmation Tasks	Action at NG
(9-1-1) Check of state of paper feed		
Multiple feed of paper	Open the front cover, and check to see if multiple sheets are fed through.	If the error recurs even after the jammed paper was removed, replace the retard roller of the tray in use.
Paper size	Check to see if the paper size specified for printing matches the size of the paper loaded in the tray.	Change the specified paper size or the paper size in the tray.
IN1 sensor	Check to see if the sensor lever demonstrates any abnormal shape or motion.	Replace the sensor lever with a normal one.

7.5.2.(10) Fuser Unit Error(Error 170-173)

(10-1) An error occurs right after turning on the power

Confirmation Items	Confirmation Tasks	Action at NG
(10-1-1) Malfunction of thermistors ***Note!***		
Upper thermistor, frame thermistor	Check to see if the thermistors are short-circuited or open. Check the resistance value through the connector pins below the fuser unit. (See Subsection 8.1 Check of resistance values (Fuser unit.)) To isolate the cause, make prints using other fuser unit. Note) To use a new fuser unit on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the fuser unit.
Installed state of fuser unit	Check to see if the fuser unit is securely pushed in to such a position that the connector at its lower part is plugged in.	Redo the installation of the fuser unit.

Note! Error 171 of Service Call may occur when the device is 0°C or less, therefore, the power should be turned on after the device temperature warmed up.

(10-2) An error occurs in 1 min. from turning on the power

Confirmation Items	Confirmation Tasks	Action at NG
(10-2-1) Temperature rise of fuser unit		
Thermostat, halogen lamp	Ensure that the heater control is properly exerted, and touch the fuser unit to confirm that it is hot. If it remains cold, confirm that the resistance between pin1 - pin2 and pin3 - pin4 of the connectors (2 pieces) measures from several Ω to several tens Ω. To isolate the cause, make prints using other fuser unit. Note) To use a new fuser unit on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the fuser unit.

Confirmation Items	Confirmation Tasks	Action at NG
(10-2-2) Temperature rise of fuser unit		
Installed state of upper thermistor	Check to see if the upper thermistor is installed away from its prescribed position, causing the temperature to be measured low. Detach the heater cover, and check visually for warpage of the sensor, etc. To isolate the cause, make prints using other fuser unit. Note) To use a new fuser unit on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the fuser unit.
(10-2-3) AC input for halogen lamp		
AC voltage of low-voltage power supply	Check to see if the AC voltage for the heater is supplied normally. Between pins 1 and 2 and between pins 3 and 4 of the CN2 connector ㉔ of the power supply.	Replace the low-voltage power supply.
Heater-on signal delivered from PU to low-voltage power supply	Check to see if the heater-on signal turns active at the warming-up timing. "L" active while it is ON. Pin14 and pin15 of the POWER connector ⑩ of the CU/PU PCB	Replace the CU/PU PCB.

7.5.2.(11) Motor Fan Error(Service call 122, 127, 128)

(11-1) Low voltage power unit fan, fuser fan, suction fan does not rotate right after turning on the power

Confirmation Items	Confirmation Tasks	Action at NG
(11-1-1) Connections and laying of cords		
Connections and laying of cords of low-voltage power supply fan, fuser fan and suction fan	Check to see if the connectors are properly connected. Check to see if the surplus portion of a cord is touching the blades of any fan	Redo the insertion of the connector. Modify the cord laying route. Replace the fan.

(11-2) DUPLEX fan does not rotate in DUPLEX printing

Confirmation Items	Confirmation Tasks	Action at NG
(11-2-1) Connection and laying of cord		
Connection and laying of Duplex fan cord	Check to see if the connector is properly connected. Check to see if the surplus portion of the cord is touching the blades of the fan.	Redo the insertion of the connector. Correct the cord laying route. Replace the fan.
24V fuse F501 of duplex PCB (V7Y PCB)	Check to see if the fuse F501 is blown out or not.	Replace the duplex PCB (V7Y PCB).
24V supply of duplex PCB (V7Y PCB)	Check to see if the fuse F3 of the CU/PU PCB is blown out or not.	Replace the CU/PU PCB.

(11-3) Every fan in the machine does not rotate

Confirmation Items	Confirmation Tasks	Action at NG
(11-3-1) 24V power supply		
Fuses F1 and F2 of CU/PU PCB	Check to see if the F1 and F2 are open or not.	Replace the CU/PU PCB.
24V power supplied to CU/PU PCB	Check the power through the POWER connector of the CU/PU PCB. Pins 7, 8, 9 : 24V Pins 10, 11, 12 : 0VP	Replace the low-voltage power supply.

7.5.2.(12) Print Speed is Slow (Low Performance)

(12-1) Print speed decreases

Confirmation Items	Confirmation Tasks	Action at NG
(12-1-1) Setting of Media Weight		
Media Weight specified for printing	Check to see if a wrong Media Weight is specified.	Correct the Media Weight.

7.5.2.(13) Option unit is not recognized

(13-1) Duplex unit is not recognized

Confirmation Items	Confirmation Tasks	Action at NG
(13-1-1) Duplex PCB		
Duplex unit	Check to see if the Duplex unit in use conforms to the printer.	Replace the Duplex unit.
(13-1-2) Check of connections		
Connections from CU/PU PCB to Duplex PCB (V7Y PCB)	Check to make sure that the cord is properly connected from OPTION connector ⑬ of the CU/PU PCB to the Duplex PCB.	Correct the connections.
Square connector connecting Duplex unit to the main body	Check to see if there is any foreign matter in the connecting part of the square connector.	Remove the foreign matter.
Square connector connecting Duplex unit to the main body	Check to see if the pins of the square connector are broken.	Replace the connector.
(13-1-3) Check of control signals		
Signals output from CU/PU PCB to Duplex PCB (V7Y PCB)	Check the signals output from OPTION connector ⑬ of the CU/PU PCB. 6pin: TXD (PU-> DUP) 4pin: RXD (DUP-> PU)	Replace the CU/PU PCB.

(13-2) 2nd Tray unit is not recognized

Confirmation Items	Confirmation Tasks	Action at NG
(13-2-1) 2nd tray PCB		
2nd tray unit	Check to see if the 2nd tray unit in use conforms to the printer.	Replace the2nd tray unit.
(13-2-2)Check of connections		
Connections from CU/PU PCB to 2nd tray PCB (V7Y PCB)	Check to make sure that the cord is properly connected from OPTION connector ⑬ of the CU/PU PCB to the Duplex PCB.	Correct the connections.
Square connector connecting 2nd tray unit to the main body	Check to see if there is any foreign matter in the connecting part of the square connector.	Remove the foreign matter.
Square connector connecting 2nd tray unit to the main body	Check to see if the pins of the square connector are broken.	Replace the connector.
(13-2-3) Check of control signals		
Signals output from CU/PU PCB to 2nd tray PCB (V7Y PCB)	Check the signals output from OPTION connector ⑬ of the CU/PU PCB. 5pin: TXD (PU -> 2nd) 3pin: RXD (2nd -> PU)	Replace the CU/PU PCB.

(13-3) 3rd Tray unit is not recognized

Confirmation Items	Confirmation Tasks	Action at NG
(13-3-1) 3rd tray PCB		
3rd tray unit	Check to see if the 3rd tray unit in use conforms to the printer.	Replace the 3rd tray unit.
	Directly install the 3rd tray unit to the printer, and follow (13-2) to perform confirmation tasks.	

7.5.2.(14) LED head is not recognized(Service Call 134)

(14-1) Service Call 134(LED HEAD Missing)

Confirmation Items	Confirmation Tasks	Action at NG
(14-1-1) Check of connections		
Connected state between CU/PU PCB connector and head connector	Check visually the connected state of the FFC.	Redo the connection properly.
Head FFC	Unplug the FFC of the head, and check for any wire breakage or peel-off of the covering along the cord.	Replace the head FFC or CU/PU PCB.
Check of Fuse conduction on CU/PU board	Check voltage is 5V between capacitor CP2. (See 7.6) Check is the resistance of fuses F501 and F502 is 1Ω or less.	Replace F501, F502 or CU/PU PCB

7.5.2.(15) EP toner cartridge is not recognized(Service Call 343, 543, 547)

(15-1) Errors caused by consumables

Confirmation Items	Confirmation Tasks	Action at NG
(15-1-1) Installed state of consumables		
EP toner cartridges	Are the EP toner cartridges installed in the right positions? Check to see if the lock levers of the EP toner cartridges are locked	Redo the installation properly.

(15-2) Errors caused by toner sensor

Confirmation Items	Confirmation Tasks	Action at NG
(15-2-1) State of toner sensor		
Toner sensor	Is the toner sensor lens stained with toner?	Wipe off the stain.
Toner sensor	Use the SWITCH SCAN function of the diagnostic mode to check to see if the sensor is normal. Hold a white paper in front of the sensor, and see if the SCAN state varies.	Replace the toner sensor PCB (IZT PCB), CU/PU PCB or the FFC between IZT and IZA.

Note! How to check a toner sensor operation with SWITCH SCAN in the self-diagnosis mode.

(1) Confirmation of the operation in the device

1. Change to a display that a changing situation of the toner sensor is confirmed from the operation panel in the self-diagnosis mode.

   Refer to Section 5.3.2.3 Switch Scan Test as for how to display the operation panel.
2. When taking out the EP toner cartridge from the device, there is a window on the observer's right from the device, in a position across to the side of the EP toner cartridge.

   In that window, a toner sensor is located.
3. Hold up a piece of white paper against a sensor in a place within 3mm from a sensor window.
4. The operation panel displays "L" if a piece of paper has light reflection and it displays "H" if not.
5. By holding up a piece of paper, if the operation panel changes "H"to "L" or "L" to "H", the device operates normally.

Response in NG:

- Clean a toner of the sensor surface and clear paper dust.
- Confirm a connection state of FFC cable between the toner sensor board (IZT) and CU/PU board.
- Check an operation again and exchange CU/PU board or a toner sensor board (IZT) if there is no change.

(2) Confirmation of the operation in EP toner cartridge

1. Install a EP toner cartridge in a position where normal operation of the device has confirmed in Confirmation (1) and check operation in the operation panel.
2. The display of the operation panel changes "H" to "L" or "L" to "H" in conjunction with an action of EP toner cartridge white light reflector when operation of EP toner cartridge is normal.

Response in NG:

- Confirm an operation state of main motor by MOTOR&CLUTCH TEST in the selfdiagnosis mode.
- Clean the surface of the white light reflector at the side of EP toner cartridge. (Dirty from a toner or paper dust.)
- Exchange the EP toner cartridge if the other EP toner cartridge is OK.

(15-3) Errors caused by machine defects

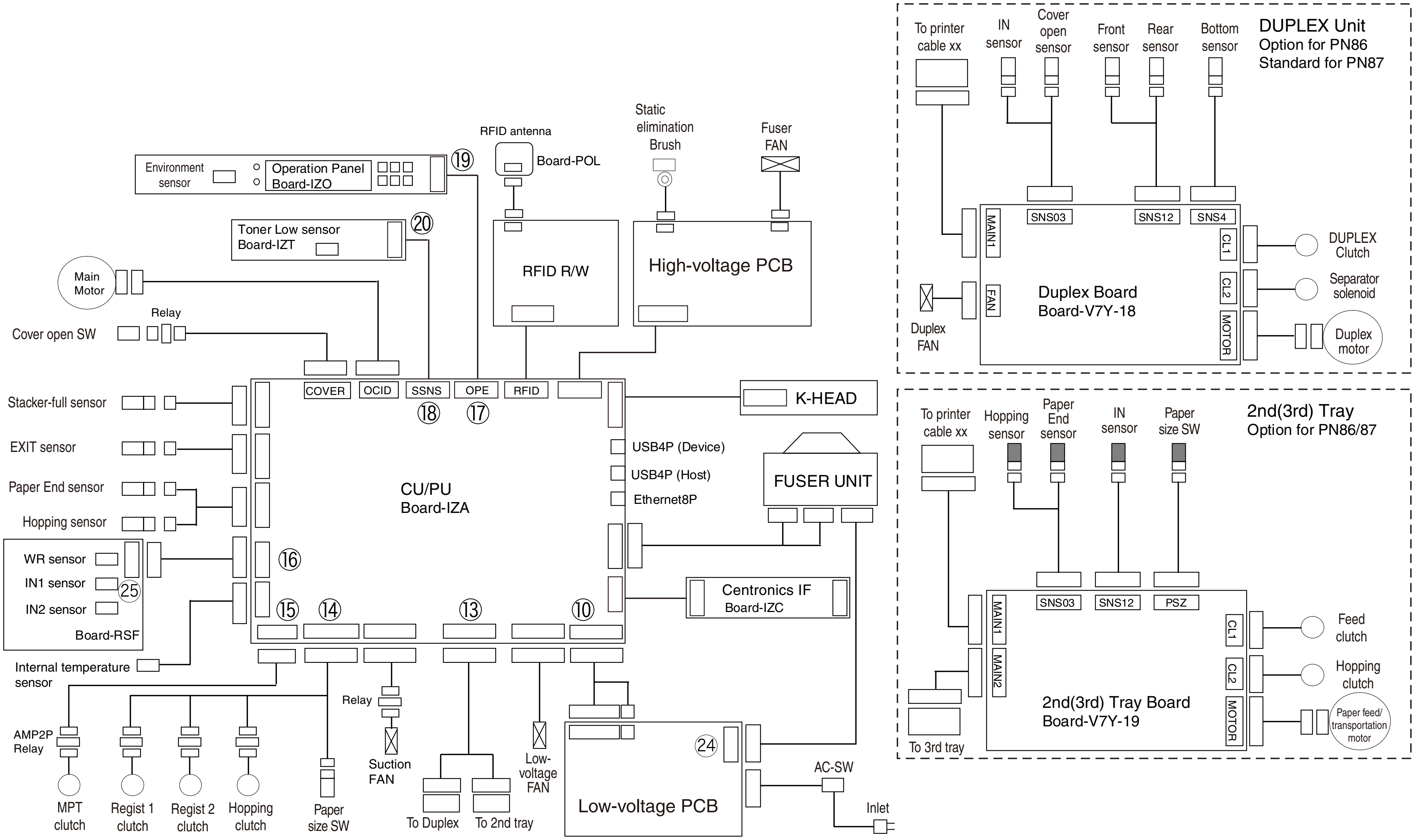
Confirmation Items	Confirmation Tasks	Action at NG
(15-3-1) Loading on EP toner cartridge		
EP toner cartridge	Is a heavy load imposed on the EP toner cartridge, for example, because the waste toner belt was ruptured? To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge.
(15-3-2) Operating state of motors		
Main motor	Use the SWITCH SCAN function of the self-diagnostic mode to check to see if each main motor operates normally. Make this checking in the presence and absence of a load.	Replace the CU/PU PCB or the main motor.

7.5.2.(16) Fuse Cutout Error (Service call 150-155)

(16-1) Fuse cutout errors

Confirmation Items	Confirmation Tasks	Action at NG
(16-1-1) Check of connections		
FFC interconnecting the CU/PU PCB and the toner sensor PCB (IZT PCB)	Check for any incomplete insertion or skew insertion of the SSNS connector ⑱ of the CU/PU PCB and the SSNS connector ⑳ of the toner sensor PCB (IZT PCB). Also check to see if the FFC has any wire breakage of peeloff of the covering.	Redo the connection of the FFC properly. Or, replace the FFC.
(16-1-2) Fuse-cut circuit		
CU/PU PCB	After checking the connections, turn on the power again, and see if the error is issued again.	Replace the CU/PU PCB.

7.5.2.(17) Connection Diagram


Environment sensor
Operation Panel Board-IZO
⑲
RFID antenna
Board-POL
Static elimination Brush
Fuser FAN
Toner Low sensor Board-IZT
⑳
Main Motor
Relay
Cover open SW
RFID R/W
High-voltage PCB
COVER
OCID
SSNS
OPE
RFID
⑱
⑰
K-HEAD
Stacker-full sensor
EXIT sensor
Paper End sensor
Hopping sensor
USB4P (Device)
USB4P (Host)
Ethernet8P
FUSER UNIT
CU/PU Board-IZA
WR sensor
IN1 sensor
IN2 sensor
Board-RSF
㉕
⑯
⑮
⑭
⑬
⑩
Centronics IF Board-IZC
Internal temperature sensor
AMP2P Relay
Relay
MPT clutch
Regist 1 clutch
Regist 2 clutch
Hopping clutch
Paper size SW
Suction FAN
To Duplex
To 2nd tray
Low-voltage FAN
㉔
Low-voltage PCB
AC-SW
Inlet
To printer cable xx
IN sensor
Cover open sensor
Front sensor
Rear sensor
Bottom sensor
DUPLEX Unit
Option for PN86
Standard for PN87
MAIN1
SNS03
SNS12
SNS4
CL1
CL2
MOTOR
FAN
Duplex FAN
Duplex Board
Board-V7Y-18
DUPLEX Clutch
Separator solenoid
Duplex motor
To printer cable xx
Hopping sensor
Paper End sensor
IN sensor
Paper size SW
2nd(3rd) Tray
Option for PN86/87
SNS03
SNS12
PSZ
MAIN1
MAIN2
CL1
CL2
MOTOR
2nd(3rd) Tray Board
Board-V7Y-19
Feed clutch
Hopping clutch
Paper feed/ transportation motor
To 3rd tray

7.5.3 Image Problem Troubleshooting

(1) Color is totally pale (Fig.7.2 A) 177

  (1-1) Color is pale 177

(2) Background is dirty (Fig.7.2 B) 178

  (2-1) Background is dirty (partly) 178

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  (3-1) Blank on the whole page 179

(4) Vertical lines are printed 179

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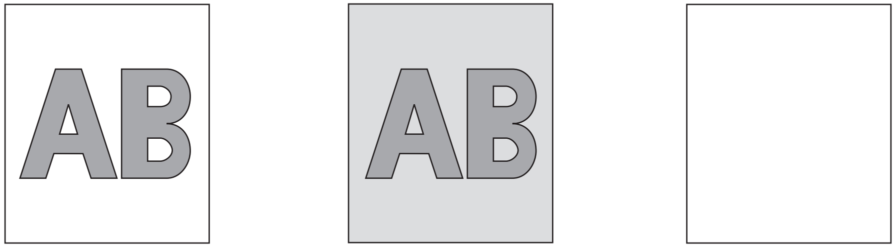
(5) Cyclic Print Trouble (Refer to Fig.7.2 E) 180

  (5-1) Vertical cyclic print trouble 180

(6) Solid Black Print 180

  (6-1) Solid black on a full page 180

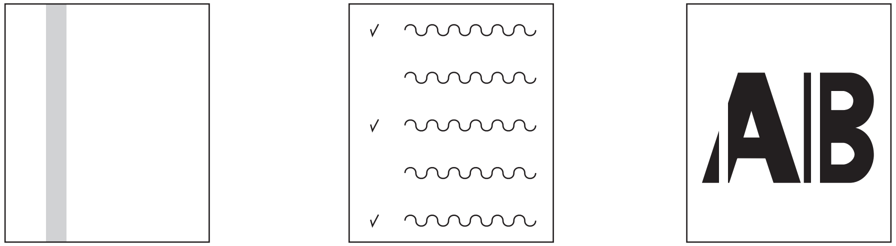
Note! Read a content of EEPROM chip on the old board and copy it to a new board when exchanging a CU/PU board.



A: Light or faded image on whole page

B: Dirty Background

C: Blank



D: Vertical black belt or line

E: Defective image of regular interval

F: Vertical white belt or line

Figure 7.2

7.5.3.(1) Color is totally pale (Fig.7.2 A)

(1-1) Color is pale

Confirmation Items	Confirmation Tasks	Action at NG
(1-1-1) Toner		
Remaining quantity of toner	Check to see if "ORDER EP TONER CARTRIDGE" or "REPLACE EP TONER CARTRIDGE" appears on the operator panel.	Replace the EP toner cartridge with a new one.
The lever of the EP toner cartridge	Check if the lever on the EP toner cartridge is in the open state.	Open the lever of the EP toner cartridge.
(1-1-2) LED head		
LED head lens	Check to see if the lens surface of the LED head is stained with toner or paper chips.	Clean the lens with a soft tissue paper.
Installed state of LED head	Check to see if the LED head is properly installed in the LED head holder. Also check to see if the right and left tension springs are properly installed.	Correct the installation properly.
(1-1-3) Print media		
Type of medium	Check to see if the medium loaded in the printer is not something particularly thick.	Use the prescribed paper.
(1-1-4) High-voltage terminal		
EP toner cartridge terminal	Ensure visually that the high-voltage terminal of the EP toner cartridge is duly in contact with the contact ASSY (see Figure 7-3). To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge or modify the highvoltage terminal.

Confirmation Items	Confirmation Tasks	Action at NG
(1-1-5) Installed state of EP toner cartridge		
Lowest position of EP toner cartridge (Deficient transfer)	Draw out and insert the EP toner cartridge by hand repeatedly, and check to see if it is normally lowered to its lowest position free from any abnormal load. Not acceptable (NG) if the leading edge of a sheet of paper inserted in between the drum and the transfer roller can readily be passed through.	Check the U-grooves of the side plates for any trouble. If the trouble is irreparable, replace the printer.

7.5.3.(2) Background is dirty (Fig.7.2 B)

(2-1) Background is dirty (partly)

Confirmation Items	Confirmation Tasks	Action at NG
(2-1-1) EP toner cartridge		
Drum exposed to light	Check to see if the ID unit has been left in an environment where its surface was exposed to light for a long time. To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge.
Leak of toner	Check to see if toner is leaking from the ID unit or toner cartridge. To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge.
(2-1-2) Fuser unit		
Offset toner of fuser unit	Check to see if the fuser unit has offset toner from the previous print job sticking. To isolate the cause, make prints using other Fuser unit. Note) To use a new Fuser unit on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Repeat idle printing by using waste medium, until the offset toner is exhausted to the print medium. Or, replace the fuser unit.

(2-2) Background is dirty (totally)

Confirmation Items	Confirmation Tasks	Action at NG
(2-1-1) Print media		
Type of medium	Check to see if an especially thin medium is used for printing.	Use the prescribed paper.
(2-2-2) High-voltage terminal		
EP toner cartridge terminal	Ensure visually that the high-voltage terminal of the EP toner cartridge is properly in contact with the contact ASSY (see Figure 7-3). To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge or modify the high voltage terminal.

7.5.3.(3) Blank Print (Fig.7.2 C)

(3-1) Blank on the whole page

Confirmation Items	Confirmation Tasks	Action at NG
(3-1-1) State of toner		
Remaining quantity of toner	Check to see if "ORDER EP TONER CARTRIDGE" or "REPLACE EP TONER CARTRIDGE" appears on the operator panel.	Replace the EP toner cartridge.
(3-1-2) State of exposure		
LED head	Check to see if the LED head faces the drum properly in the prescribed position when the cover is closed. Also check to see if there is something on the lightemitting surface of the LED head that obstructs the light emission.	Correct the installed position of the LED head.
Connected state of LED head	Check to see if the LED head is properly connected.	Replace the LED head.
Drum shaft	Check to see if the drum shaft is so mounted that it properly touches the right and left side plates. To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge.
(3-1-3) High-voltage terminal		
EP toner cartridge terminal	Ensure visually that the high-voltage terminal of the EP toner cartridge is properly in contact with the contact ASSY (see Figure 7-3). To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge or high-voltage PCB. Or, modify highvoltage terminal.

7.5.3.(4) Vertical lines are printed

(4-1) Thin vertical lines (with color) (See Fig.7.2 D)

Confirmation Items	Confirmation Tasks	Action at NG
(4-1-1) State of EP toner cartridge		
Filming of EP toner cartridge	Check to see if the print was conducted in the absence of toner. To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge.

(4-2) Thin vertical lines (without color) (See Fig.7.2 F)

Confirmation Items	Confirmation Tasks	Action at NG
(4-2-1) State of LED head		
LED head	Check to see if the LED head has any foreign matter sticking to the light-emitting surface of the SELFOC lens.	Remove the foreign matter.
(4-2-2) Running state of paper		
Path route	Check to see if there is a burr in the paper running path before fuser that scratches unfixed toner.	Remove the burr.

7.5.3.(5) Cyclic Print Trouble (Refer to Fig.7.2 E)

(5-1) Vertical cyclic print trouble

Confirmation Items	Confirmation Tasks	Action at NG
(5-1-1) Periodicity		
Image drum	Check to see if the periodicity is 94.3 mm or not.	Replace the EP toner cartridge.
Development roller	Check to see if the periodicity is 39.7 mm or not.	Replace the EP toner cartridge.
Toner supply roller	Check to see if the periodicity is 58.4 mm or not.	Replace the EP toner cartridge.
Charging roller	Check to see if the periodicity is 37.7 mm or not.	Replace the EP toner cartridge.
Roller on the fuser unit	Check to see if the periodicity is 87.7 mm or not.	Replace the fuser unit.
Roller under the fuser unit	Check to see if the periodicity is 88.5 mm or not.	Replace the fuser unit.
Transfer roller	Check to see if the periodicity is 50.3 mm or not.	Replace the Transfer roller.
	To isolate the cause, make prints using other consumable part. Note) To use a new consumable part on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	

7.5.3.(6) Solid Black Print

(6-1) Solid black on a full page

Confirmation Items	Confirmation Tasks	Action at NG
(6-1-1) High-voltage contact state		
CH terminal	Check visually from above to see if the terminal extending from the printer is properly in contact with the high-voltage terminal on the left side of the EP toner cartridge.	Replace the terminal of the printer side.
CH terminal	Check to see if the high-voltage terminal remains in normal contact on the high-voltage PCB. Remove the high-voltage PCB by opening the left cover, and check to see if the terminal is abnormally installed	Redo the installation of the terminal properly.
EP toner cartridge terminal	Ensure visually that the high-voltage terminal of the EP toner cartridge is properly in contact with the contact ASSY (see Figure 7-3) To isolate the cause, make prints using other EP toner cartridge. Note) To use a new EP toner cartridge on a trial basis, use FUSE KEEP MODE of the System Maintenance Menu.	Replace the EP toner cartridge, high-voltage PCB, or modify the highvoltage terminal.
(6-1-2) State of high-voltage output		
CH output	If a high-voltage probe is available among the maintenance tools, open the left cover, and check the CH output with the high-voltage probe through the solder side of the high-voltage PCB while the machine is printing. (The high-voltage probe is not an ordinary maintenance tool.)	Replace the high-voltage PCB.

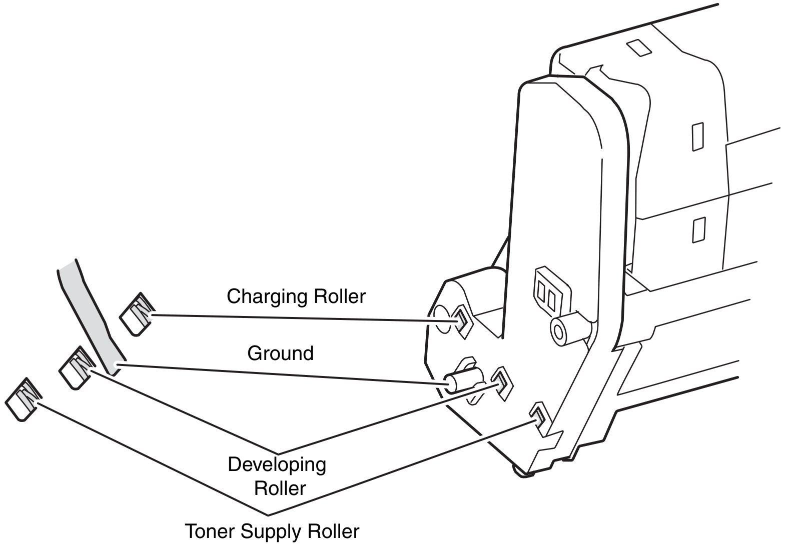

Charging Roller
Ground
Developing
Roller
Toner Supply Roller

Figure 7.3

7.5.4 Network Troubleshooting

(1) Cannot print.

Confirmation Items	Confirmation Tasks	Action at NG
(1) Check of LINK light		
Check to see if the LINK light (green) is on.	Check to see if the HUB and the printer are properly linked. (Check to see if the network cable is properly connected.)	Redo the connection of the network cable.
	Check to see if a straight cable is in use.	Replace the cable with a straight cable.
	Insert a Network cable to a different HUB port.	Replace the HUB.
(2) Check of network information		
Check to see if network information can be printed correctly.	Select [Information Menu] - [Network / Execute] on the panel and print the network information.	Rewrite NIC-F/W with the utility.
(3) Check of contents of network information		
Check the IP address, SUB-net mask and gateway address.	Check an IP address, Subnet mask, Gateway address printed on Network information.	Set an IP address, Subnet mask, and Gateway address correctly.
(4) Check to see if communication can be held through the network.		
Check to see if a Ping command can be sent from the PC to the printer.	Confirm if correct reply is returned from a printer to a PC when the PC sends the Ping to a printer.	Set an IP address, Subnet mask, Gateway address correctly
(5) Check of Utility		
Check the settings of the OKI LPR Utility.	Check the set items of the OKI LPR Utility.	Set the set items of the OKI LPR Utility correctly.
(6) Check through standard OS port		
Check the standard LRP port conforming to the WINDOWS standard (NT, 2000, XP).	Set the standard LPR port conforming to the WINDOWS standard (NT, 2000, XP), and see if print can be executed.	Set the standard LPR port conforming to the WINDOWS standard (NT, 2000, XP) correctly.

7.5.4.1 Connection errors occur by use of a Web browser

If the printer setting page cannot be displayed at “https://<printer IP address>” by a Web browser, check the followings.

Establish connection by https://<printer IP address>.

1) If the printer setting page is displayed, the followings are probable.
Take an appropriate measure by referring to the following sections.
* A certificate is not created yet (or creation of a certificate failed).
-> Refer to section “7.5.4.1.1 Has a certificate been created?”
* A certificate has been created but the SSL/TLS setting is set to OFF.
-> Refer to section “7.5.4.1.2 Is the SSL/TLS setting set to ON?”

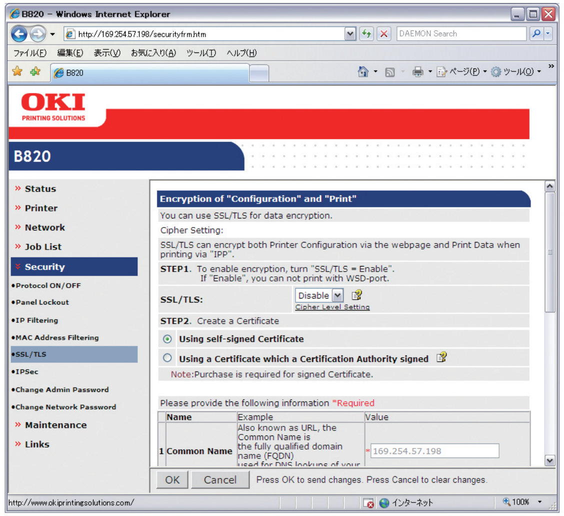
2) If the printer setting page is not displayed, the followings are probable.
* The version number of the browser is old.
-> Refer to section “7.5.4.1.3 Check the version number of the Web browser.”
* Encryption strength is set to Strong.
-> Refer to section “7.5.4.1.4 Check the encryption strength of the printer.”

7.5.4.1.1 Has a certificate been created?

Log in as an administrator and select Security and Encryption (SSL/TLS).

If the following screen is displayed, no certificate of the printer is created yet. (The same screen is displayed when creation of a certificate has failed.)

Solution: Create a certificate by referring to the User's Manual (Advanced).


B820 – Windows Internet Explorer
http://169.254.57.198/securityfrm.htm
OKI PRINTING SOLUTIONS
B820
» Status
» Printer
» Network
» Job List
» Security
•Protocol ON/OFF
•Panel Lockout
•IP Filtering
•MAC Address Filtering
•SSL/TLS
•IPSec
•Change Admin Password
•Change Network Password
» Maintenance
» Links
OK
Cancel
http://www.okiprintingsolutions.com/
インターネット
100%

Encryption of "Configuration" and "Print"

You can use SSL/TLS for data encryption.

Cipher Setting:

SSL/TLS can encrypt both Printer Configuration via the webpage and Print Data when printing via "IPP".

STEP1. To enable encryption, turn "SSL/TLS = Enable".
If "Enable", you can not print with WSD-port.

SSL/TLS: Disable
Cipher Level Setting

STEP2. Create a Certificate

● **Using self-signed Certificate**

○ **Using a Certificate which a Certification Authority signed**

Note:Purchase is required for signed Certificate.

Please provide the following information *Required

	Name	Example	Value
1	**Common Name**	Also known as URL, the Common Name is the fully qualified domain name (FQDN) used for DNS lookups of your	* 169.254.57.198

Press OK to send changes. Press Cancel to clear changes.

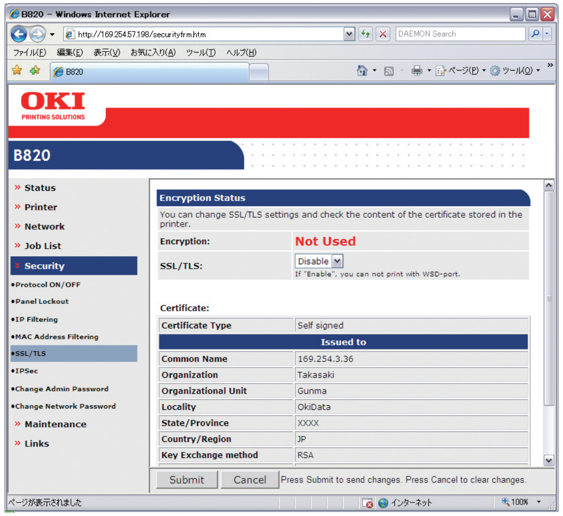
Screen before creation of a certificate (default)

7.5.4.1.2 Is the SSL/TLS setting set to ON?

Log in as an administrator and select Security and Encryption (SSL/TLS).

If the following screen is displayed, a certificate has already been created, but the SSL/TLS setting is set to OFF.

Solution: Change the SSL/TLS setting to ON.


B820 – Windows Internet Explorer
http://169.254.57.198/securityfrm.htm
OKI PRINTING SOLUTIONS
B820
» Status
» Printer
» Network
» Job List
» Security
•Protocol ON/OFF
•Panel Lockout
•IP Filtering
•MAC Address Filtering
•SSL/TLS
•IPSec
•Change Admin Password
•Change Network Password
» Maintenance
» Links
Submit
Cancel
ページが表示されました
インターネット
100%

Encryption Status

You can change SSL/TLS settings and check the content of the certificate stored in the printer.

Encryption: Not Used

SSL/TLS: Disable
If "Enable", you can not print with WSD-port.

Certificate:

Certificate Type	Self signed
Issued to	
Common Name	169.254.3.36
Organization	Takasaki
Organizational Unit	Gunma
Locality	OkiData
State/Province	XXXX
Country/Region	JP
Key Exchange method	RSA

Press Submit to send changes. Press Cancel to clear changes.

7.5.4.1.3 Check the version number of the Web browser.

Check the version number of the Web browser being used.

How to check the version number:

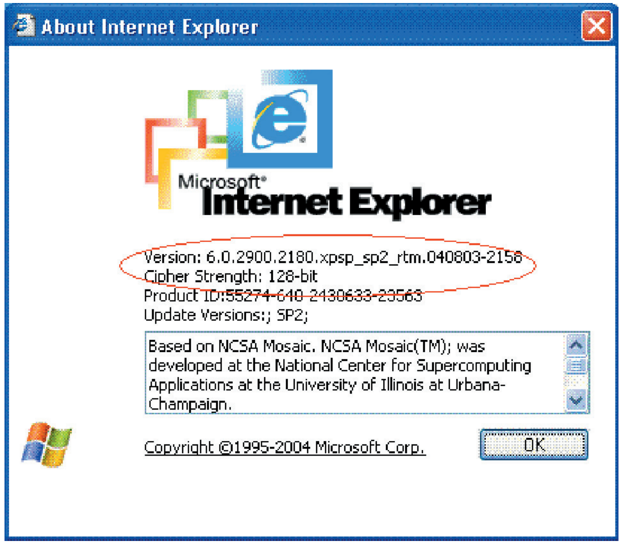
For Internet Explorer

Start the browser and select HELP and Version information.

A recommended version is Internet Explorer 6.0 or higher.

Solution: Install the latest Web browser or install a high encryption pack.

If the version of the browser in use is older than the recommended version, communication may become possible in some cases by setting the encryption strength to Weak. Setting the encryption strength to Weak lowers the security level. To change the encryption strength, refer to section “7.5.4.1.4 Confirm the encryption strength of the printer.”



Version: 6.0.2900.2180.xpsp_sp2_rtm.040803-2158
Cipher Strength: 128-bit
Product ID:55274-640-2430633-23563
Update Versions:; SP2;

Based on NCSA Mosaic. NCSA Mosaic(TM); was developed at the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign.

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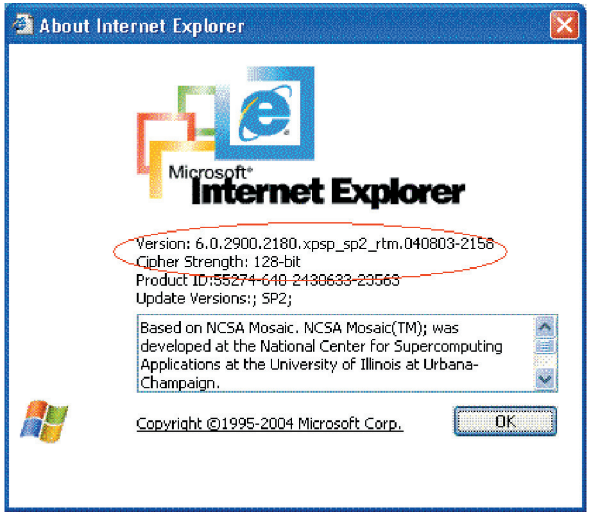
7.5.4.1.4 Check the encryption strength of the printer.

The description about the browser version checked in section “7.5.4.1.3 Check the version number of the Web browser.” contains the cipher strength of the browser. If the cipher strength described there is not 128 bits, the browser cannot communicate with the printer whose encryption strength is Standard.

Upgrade the browser to support 128 bits (high encryption) or set the printer encryption strength to Weak.



Version: 6.0.2900.2180.xpsp_sp2_rtm.040803-2158
Cipher Strength: 128-bit
Product ID:55274-640-2430633-23563
Update Versions:; SP2;

Based on NCSA Mosaic. NCSA Mosaic(TM); was developed at the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign.

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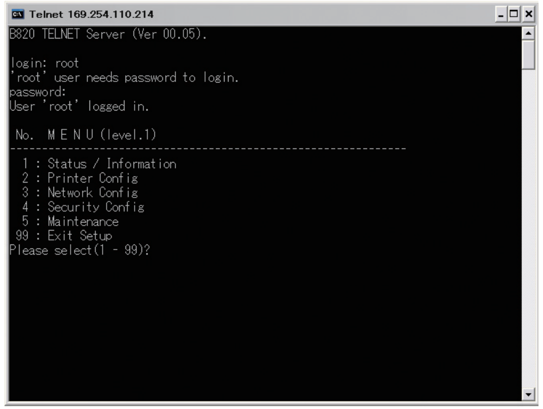
Solution: Set the encryption strength to Weak.

Changing the encryption strength using Telnet

Note! Telnet cannot be used by default. To change the encryption strength, Enable must be specified for Telnet.

Enter “Telnet <printer IP address>” at the command prompt (DOS prompt) and press the return key.

Establish connection using an administrator user name and a password.

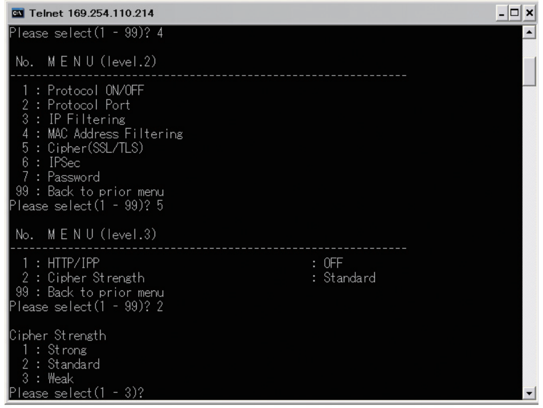


```
B820 TELNET Server (Ver 00.05).

login: root
'root' user needs password to login.
password:
User 'root' logged in.

 No.  M E N U (level.1)
--------------------------------------------------------------
  1 : Status / Information
  2 : Printer Config
  3 : Network Config
  4 : Security Config
  5 : Maintenance
 99 : Exit Setup
Please select(1 - 99)?
```

Select [4: Security Config], [5: Cipher (SSL/TLS)] and [2: Cipher Strength], and change the cipher strength as desired (1: Strong, 2: Standard, 3: Weak).



```
Please select(1 - 99)? 4

 No.  M E N U (level.2)
--------------------------------------------------------------
  1 : Protocol ON/OFF
  2 : Protocol Port
  3 : IP Filtering
  4 : MAC Address Filtering
  5 : Cipher(SSL/TLS)
  6 : IPSec
  7 : Password
 99 : Back to prior menu
Please select(1 - 99)? 5

 No.  M E N U (level.3)
--------------------------------------------------------------
  1 : HTTP/IPP                                   : OFF
  2 : Cipher Strength                            : Standard
 99 : Back to prior menu
Please select(1 - 99)? 2

Cipher Strength
  1 : Strong
  2 : Standard
  3 : Weak
Please select(1 - 3)?
```

7.5.4.2 Print operation is not possible

If print operation is not possible by using an encrypted IPP printer, check the followings.

Establish connection by https://<printer IP address>.

1) If the printer setting page is displayed, the followings are probable.
   Take an appropriate measure by referring to the following sections.
   * A certificate is not created yet (or creation of a certificate failed).
     -> Refer to section “7.5.4.1.1 Has a certificate been created?”
   * A certificate has been created but the SSL/TLS setting is set to OFF.
     -> Refer to section “7.5.4.1.2 Is the SSL/TLS setting set to ON?”

2) If the printer setting page is not displayed, the followings are probable.
   Take an appropriate measure by referring to the following sections.
   * The version number of the browser is old.
     -> Refer to section “7.5.4.1.3 Check the version number of the Web browser.”
   * Encryption strength is set to Strong.
     -> Refer to section “7.5.4.1.4 Check the encryption strength of the printer.”
   * The browser doesn’t support the key exchange method of the printer. (Compatibility problem)
   * The OS does not support IPP (encrypted) printing.
     -> Refer to section “7.5.4.2.1 Check the OS (Operating System).”
   * An IPP (encrypted) printer has not been created yet.
     -> Refer to section “7.5.4.2.2 Has a printer been created?”
   * IPP setup of the Printer is not Enabled.
     -> Refer to section “7.5.4.2.3 Is the IPP setting set to Enable?”

7.5.4.2.1 Check the OS (Operating System).

The IPP print (encryption) function is available on Windows 2000, Windows XP, Windows 2003 Server and Windows Vista, Windows 7 only.

It is not available on other operating systems.

7.5.4.2.2 Has a printer been created?

The printer may not have been created properly.

To use the IPP print (encryption) function, a printer must have been created by setting the port as URL https://<printer IP address>/ipp.

For details of printer creation methods, refer to the User’s Manual (Advanced).

7.5.4.2.3 Is the IPP setting set to Enable?

The IPP setting may not be set to Enable.

As the default setting of the printer, IPP has been set to Disable.

To use the IPP print function, the IPP setting must be set to Enable.

For how to change the IPP setting, refer to the User’s Manual (Advanced).

7.5.4.3 A certificate cannot be created.

When a certificate cannot be created, the following causes are probable.
Take an appropriate measure by referring to the following sections.

* Not all the required entry fields are filled in.
-> Refer to section "7.5.4.3.1 Not all the required entry fields are filled in."
* The printer is printing.
-> Refer to section "7.5.4.3.2 The printer is printing."

7.5.4.3.1 Not all the required entry fields are filled in.

If every required entry field is filled in, a certificate cannot be created.

To create a certificate, the followings must be filled in: CommonName, Organization, Locality, State/Province, Country/Region. (Entry into Organizational Unit may be skipped.)

Solution: Enter appropriate values into all of the required entry fields, and execute creation of a certificate. For details of the required entry fields and how to create certificates, refer to the User's Manual (Advanced).

7.5.4.3.2 The printer is printing.

No certificate can be created during printing. (Print operation has priority.)

Solution: It is required to keep the printer not to perform any operation (such as printing) until the whole operation from creating a certificate, a self-signed certification and a CSR of a certificate of a certifying authority, to installing a certificate is completed (completion of creation of a self-signed certification and a CSR, and completion of installation of a certificate).

7.5.4.4 A certificate cannot be installed.

When installation of a certificate fails, the following causes are probable.

Take an appropriate measure by referring to the following sections.

* The user has changed the IP address of the printer to an IP address that is different from the IP address used during creation of a CSR.
-> Refer to section "7.5.4.4.1 The printer IP address has been changed."

* The network card is initialized while the user is applying for issuance of a certificate to a certifying authority (i.e., while waiting for installation of a certificate).
-> Refer to section "7.5.4.4.2 The network card has been initialized."

* "Deletion of CSR" was executed while the user is applying for issuance of a certificate to a certifying authority (i.e., while waiting for installation of a certificate).
-> Refer to section "7.5.4.4.3 A CSR has been deleted."

* An intermediate certificate is installed.
-> Refer to section "7.5.4.4.4 Install an intermediate certificate.

7.5.4.4.1 The printer IP address has been changed.

If the printer IP address is different from the IP address used during creation of a CSR in trying to install a certificate, an error occurs and installation of a certificate is not performed. If a change was made to the setting of printer IP address only, no error will occur after the IP address is changed to the original one.

Solution: Reset the IP address of the printer to the IP address used during creation of a CSR, and then install a certificate.

Note! Do not change any printer setting while a creation process of a certificate of a certifying authority is in progress (during a period from creation of a CSR to installation of a certificate). If any printer setting is changed, the issued certificate becomes invalid necessitating resetting from the beginning. If printer setting is changed after a certificate is obtained, Security warning is displayed on the Web browser.
If the IP address of the printer is changed, the certificate becomes invalid. (Pay certificates of certifying authorities may require some charge for reissuance. For details, contact certifying authorities.)

7.5.4.4.2 The network card has been initialized.

If the network card is initialized (the factory default) while a creation process of a certificate of a certifying authority is in progress (during a period from creation of a CSR to installation of a certificate), the setting information of the certificate is deleted. The deleted information cannot be recovered by any means. (Even when the same information as before is entered, the same certificate cannot be created.)

Solution: Repeat all the steps from the beginning. (A certificate of which issuance has been applied is already invalid.)

7.5.4.4.3 A CSR has been deleted.

If a CSR is deleted (if a certificate is deleted) while a creation process of a certificate of a certifying authority is in progress (during a period from creation of a CSR to installation of a certificate), the setting information of the certificate is deleted. The deleted information cannot be recovered by any means. (Even when the same information as before is entered, the same certificate cannot be created.)

Solution: Repeat all the steps from the beginning. (A certificate of which issuance has been applied is already invalid.)

7.5.4.4.4 Install an intermediate Certificate.

Some certifying authorities perform installation of an SSL server certificate (a printer certificate) and an intermediate certificate in printers.

However, since a printer of this model supports installation of only one certificate, an intermediate certificate cannot be installed in the printer. Be sure to install an SSL server certificate in the printer.

To install an intermediate certificate, install the intermediate certificate not in the printer, but in a client PC (browser).

For the steps of installing an intermediate certificate in a client PC (browser), see the followings.

Installing an intermediate certificate (or CA certificate) in a client PC (browser)

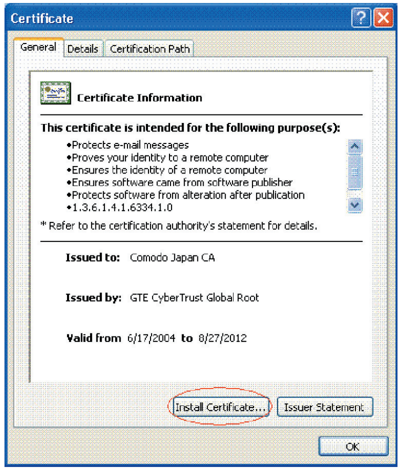
[Steps]

1. Double-click an intermediate certificate (or CA certificate) issued by a certifying authority, on a client PC to view them.

   E.g.: A Comodo intermediate certificate is in the text (PEM) format: ComodoJapanCA.Crt or binary format: ComodoJapanCA.cer, and either format is acceptable to open. (The same result can be obtained.)

Open either ComodoJapanCA.crt or ComodoJapanCA.cer.

2. On the General tab of the displayed Certificate information window, press the Install Certificate… button.



Certificate Information

This certificate is intended for the following purpose(s):

- Protects e-mail messages
- Proves your identity to a remote computer
- Ensures the identity of a remote computer
- Ensures software came from software publisher
- Protects software from alteration after publication
- 1.3.6.1.4.1.6334.1.0

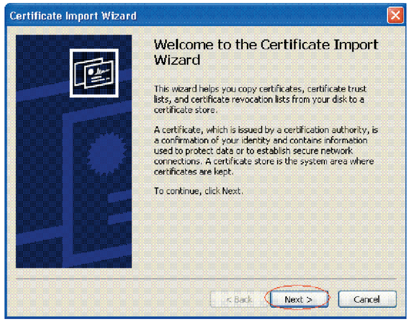
* Refer to the certification authority's statement for details.

Issued to: Comodo Japan CA

Issued by: GTE CyberTrust Global Root

Valid from 6/17/2004 **to** 8/27/2012

3. After the Certificate Import Wizard appears, install a certificate by following the on-screen procedure. Select “Automatically select the certificate store based on the types of certificate,” so that the certificate will be installed automatically.

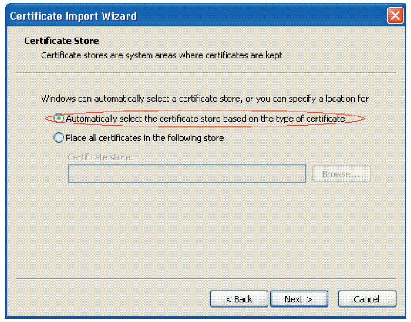


Welcome to the Certificate Import Wizard

This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.

A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.

To continue, click Next.



Certificate Store

Certificate stores are system areas where certificates are kept.

Windows can automatically select a certificate store, or you can specify a location for

● Automatically select the certificate store based on the type of certificate

○ Place all certificates in the following store

Certificate store:

7.5.4.5 Other questions

Other possible questions are described below.

7.5.4.5.1 Time required for creation of a certificate

It takes several tens of seconds to create a certificate.

7.5.4.5.2 Communication time when the encryption function is enabled

When the encryption function is being used, communication time takes longer than usual.

7.5.4.5.3 Can encrypted printing be performed without IPP?

Answer: Encrypted printing is not available without IPP.

Encryption can be performed only in IPP printing.

7.5.4.5.4 What will happen if SSL/TLS is set to OFF after a certificate is created (or installed)?

Answer: A certificate will be remained saved as it is.

If SSL/TLS is set to ON again, the certificate becomes available.

7.5.4.5.5 How to change the port number

nswer: The port number for SSL/TLS communication is fixed to 443.

It cannot be changed.

7.5.4.5.6 The error message “The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority” is displayed.

When this error message appears, it means that the certificate installed in the printer is self-signed certificate. Other possibilities are that the certificated installed in the printer is a certificated of a certifying authority, and also either a CA certificate of the certifying authority or an intermediate certificate has not been installed in the client PC.

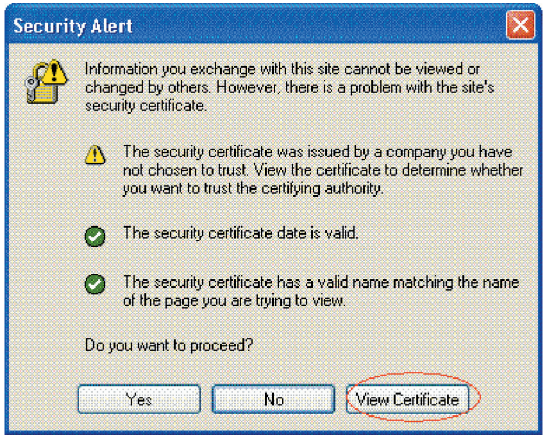
If the certificate is a self-signed certificate, the error message (security warning) doesn’t appear after the self-signed certificate of the printer is installed in the client PC.

If the installed in the printer is a certificate of a certifying authority, the error message (security warning) doesn’t appear after the CA certificate or the intermediate certificate of the certifying authority is installed in the client PC.

Solution: Install such certificates in the client PC (browser).

[Steps]

1. Click the View Certificate button on the error (security warning) screen.



Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.

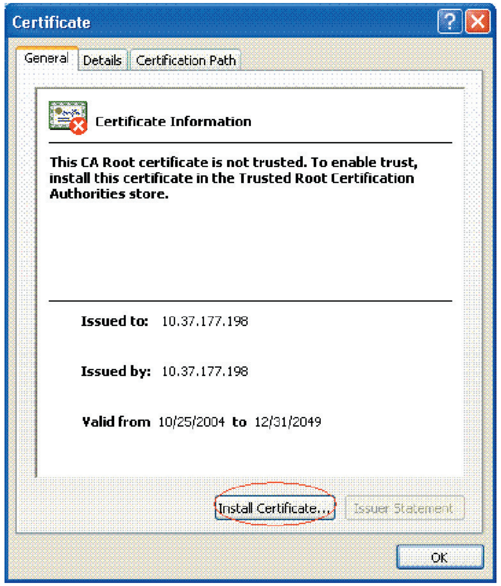
The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.

The security certificate date is valid.

The security certificate has a valid name matching the name of the page you are trying to view.

Do you want to proceed?

2. On the General tab of the displayed Certificate information window, press the Install Certificate… button.



Certificate Information

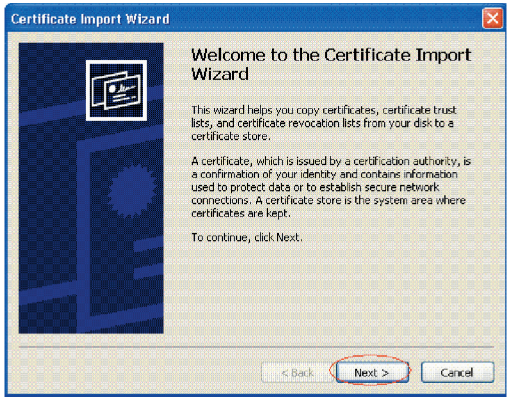
This CA Root certificate is not trusted. To enable trust, install this certificate in the Trusted Root Certification Authorities store.

Issued to: 10.37.177.198

Issued by: 10.37.177.198

Valid from 10/25/2004 to 12/31/2049

3. After the Certificate Import Wizard appears, install a certificate by following the on-screen procedure. Select "Automatically select the certificate store based on the types of certificate," so that the certificate will be installed automatically.

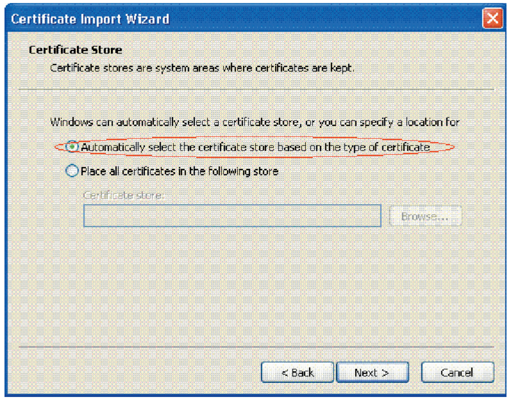


Welcome to the Certificate Import Wizard

This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.

A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.

To continue, click Next.



Certificate Store

Certificate stores are system areas where certificates are kept.

Windows can automatically select a certificate store, or you can specify a location for

● Automatically select the certificate store based on the type of certificate

○ Place all certificates in the following store

Certificate store:

7.5.4.5.7 The error message "Name of security certificate is invalid or does not match the site name" is displayed.

It means that the printer IP address is different from the IP address that is described on a certificate or from the IP address used when the certificate was created.

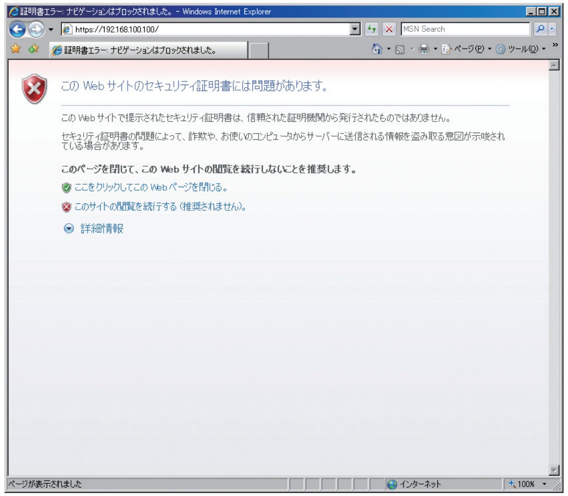
Solution: Change the printer IP address back to the IP address used when a self-signed certificate was created or to the IP address used when a CSR was created.

7.5.4.6 Restrictions when using Internet Explore 7, 8

Several restrictions are imposed when Internet Explore 7, 8 is used. This is because security restrictions of IE7 have become more severe then ever.

7.5.4.6.1 Warning indication when SSL is enabled for self-signed certificates

If SSL is enabled for self-signed certificates, the window shown below appears in an attempt to access the Web page, and the Web page will not be displayed.



証明書エラー: ナビゲーションはブロックされました。 - Windows Internet Explorer
https://192.168.100.100/
MSN Search
証明書エラー: ナビゲーションはブロックされました。
ページ(P)
ツール(O)
ページが表示されました
インターネット
100%

この Web サイトのセキュリティ証明書には問題があります。

この Web サイトで提示されたセキュリティ証明書は、信頼された証明機関から発行されたものではありません。

セキュリティ証明書の問題によって、詐欺や、お使いのコンピュータからサーバーに送信される情報を盗み取る意図が示唆されている場合があります。

このページを閉じて、この Web サイトの閲覧を続行しないことを推奨します。

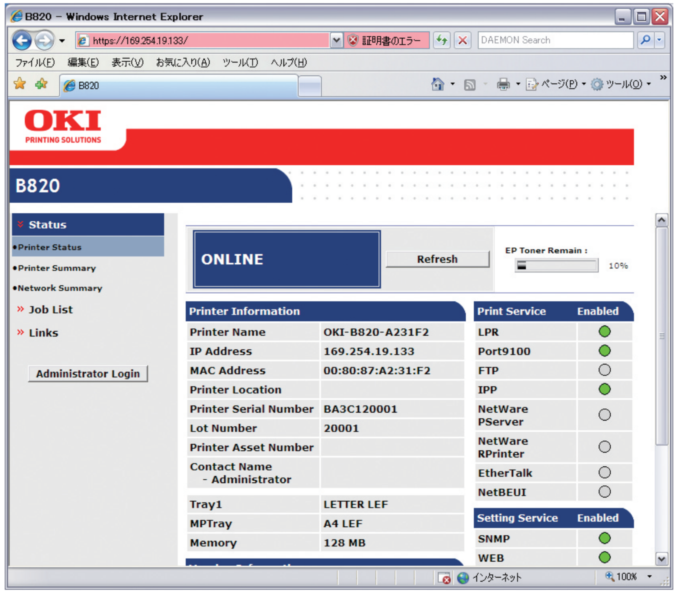
ここをクリックしてこの Web ページを閉じる。

このサイトの閲覧を続行する (推奨されません)。

詳細情報

Web display when SSL is enabled for self-signed certificates

Solution: The Web page is displayed by clicking “Continue browsing this site (not recommended)” on the warning screen.
It doesn’t affect the Web page functions, and the Web page can be used for browsing or changing printer settings with no problems.



B820 – Windows Internet Explorer
https://169.254.19.133/
証明書のエラー
DAEMON Search
ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)
B820
ページ(P)
ツール(O)
OKI
PRINTING SOLUTIONS
B820
Status
•Printer Status
•Printer Summary
•Network Summary
Job List
Links
Administrator Login
ONLINE
Refresh
EP Toner Remain :
10%
インターネット
100%

Printer Information	
Printer Name	OKI-B820-A231F2
IP Address	169.254.19.133
MAC Address	00:80:87:A2:31:F2
Printer Location	
Printer Serial Number	BA3C120001
Lot Number	20001
Printer Asset Number	
Contact Name - Administrator	
Tray1	LETTER LEF
MPTray	A4 LEF
Memory	128 MB

Print Service	Enabled
LPR	●
Port9100	●
FTP	○
IPP	●
NetWare PServer	○
NetWare RPrinter	○
EtherTalk	○
NetBEUI	○

Setting Service	Enabled
SNMP	●
WEB	●

Web page displayed after “Continue browsing this site (not recommended)” is clicked

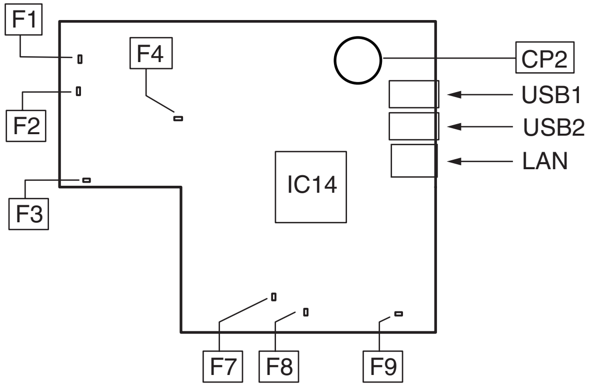
7.6 Check of fuses

If any of the following errors is issued, check the corresponding fuse on the CU/PU board, Option tray board or Duplex board. (See Table 7-6.)

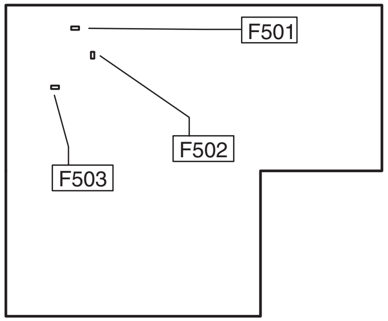
Table 7-6 Fuse Error

Board	Fuse	Error Description	Insert Point	Resistance
CU/PU	F8	Not start	1.2VS,1.8VS DCDC convertor circuit	1Ω or lessr
	F502	Not start	LED HEAD 3.3V	
	F501	Service Call 134	LED HEAD 5V	
	F503	IC card reader is not recognized	USB Host	
	F9	Centro IF is not recognized	Centro Board	
	F7	Not start	ID Motor	
			photo sensor	
			Board - RSF-2	
			photo sensor	
			Board - IZO	
			Board - RFID Read/Write	
			Board - V7Y-17	
			Board - V7Y-18	
			Board - IZT	
			High Voltage Power Supply	
			Stucker Full sensor	
	F1	Service Call 128 : Suction FAN ERROR	Regist Clutch 1 Regist Clutch 2	
			Adhesive FAN	
	F2	Service Call 155 : Fuser unit fuse-cut error	Hopping Clutch	
			Low Voltage Power Supply	
			MPT Clutch	
			ID unit fuse	
			Fuser unit fuse	
	F3	POWER OFF/ON 918 ERROR (Duplex Fan ERROR)	Board - V7Y-17	
			Board - V7Y-18	
	F4	Service Call 121 and blank sheet print	High Voltage Power Supply Fuser FAN	
Option tray	F501	Paper Feed Jam 2nd/3rd Tray	Feed motor	
Duplex	F501	POWER OFF/ON 918 ERROR (Duplex Fan ERROR)	Duplex motor	

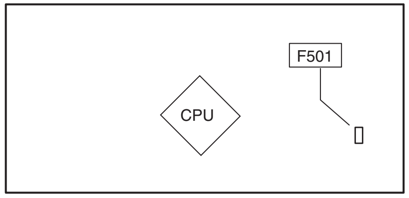
CU/PU board component side



CU/PU board component side



Duplex board component side



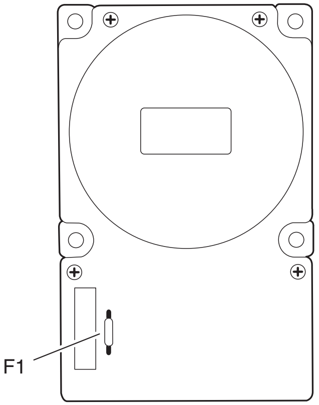
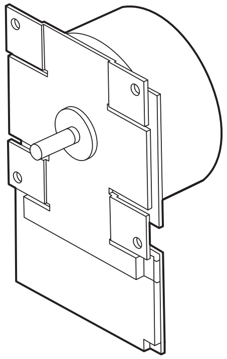
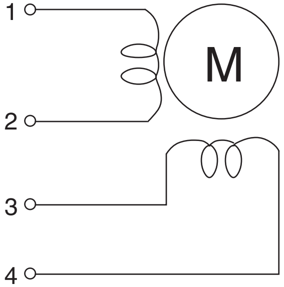
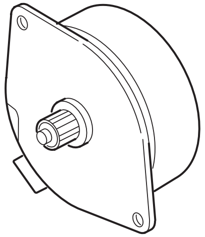
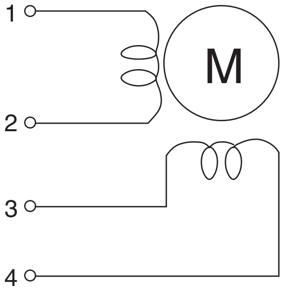
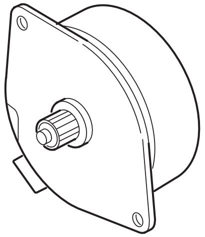
7.7 Paper cassette switches versus Paper size correspondence table

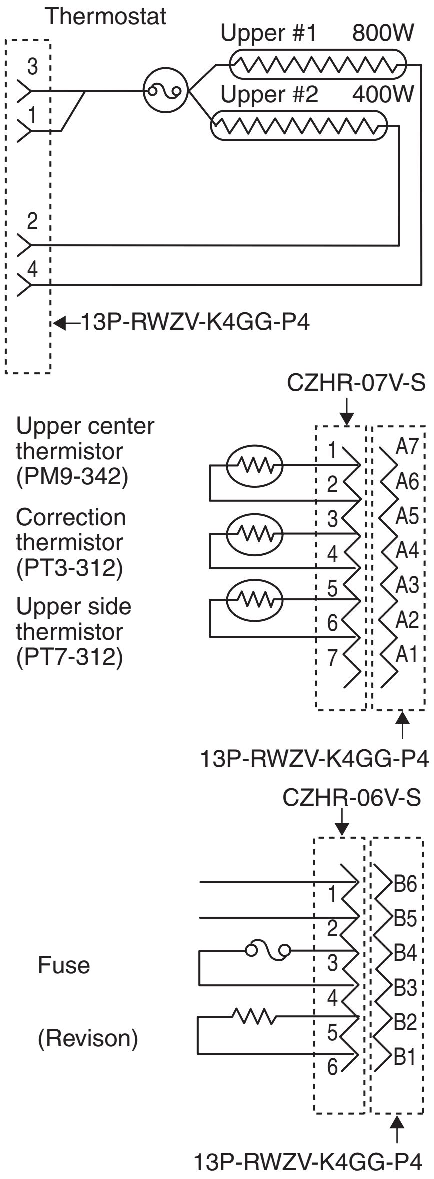
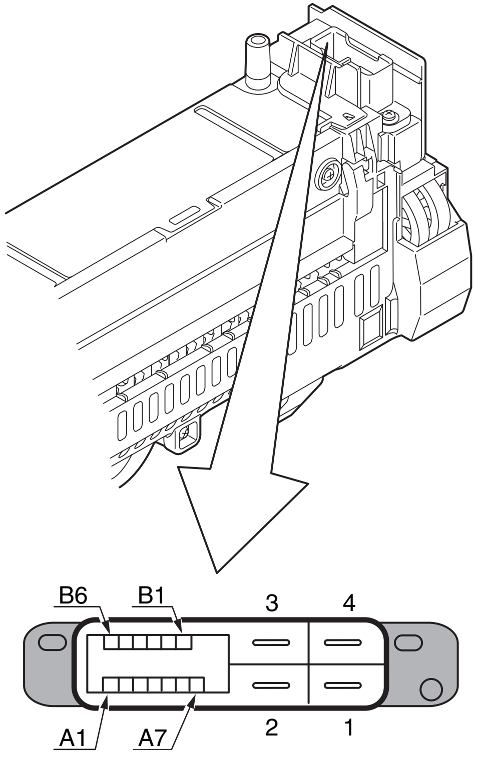
Bit No.				Dial Indication Size
1	2	3	4	TRAY 1/2/3
H	H	H	H	No cassette
L	L	L	L	A4 LEF
H	H	L	L	OTHER
L	H	L	L	A5 SEF
L	H	H	L	LETTER LEF
H	H	H	L	LEGAL
H	L	H	L	B5 LEF
H	L	H	H	B4
L	L	L	H	A4 SEF
L	L	H	L	A3
L	L	H	H	Reserved
L	H	L	H	Reserved
H	H	L	H	Reserved
H	L	L	H	Reserved
L	H	H	H	Reserved
H	L	L	L	Reserved
Press of SW: L				

8. CONNECTION DIAGRAMS

8.1 Check of resistance values 195
8.2 Component layout 197
8.3 Firmware revision numbers 202

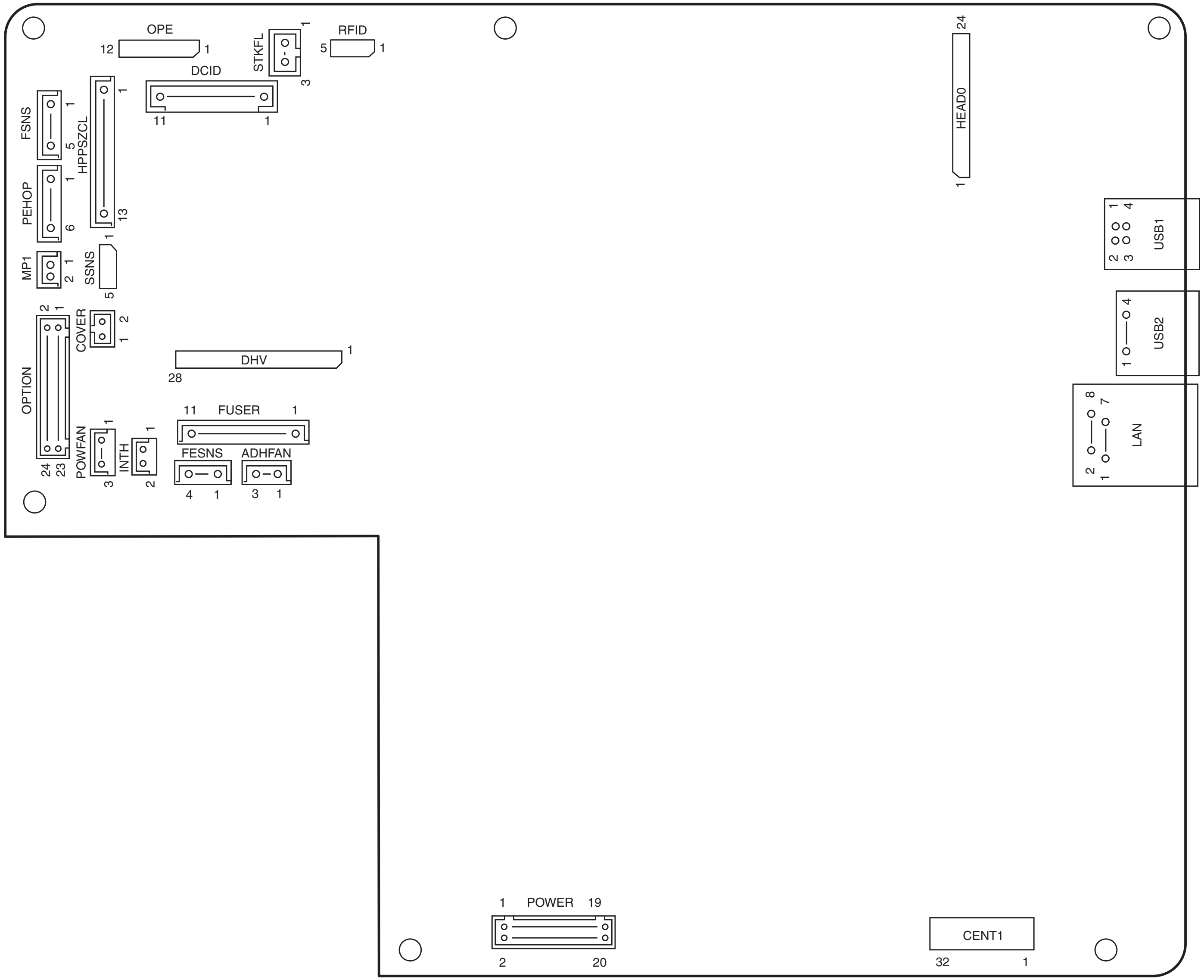
8.1 Check of resistance values

Unit	Circuit diagram & Configuration	Part schematic	Resistance value
Main motor			Both ends of F1: 1Ω or less
Duplex motor			Between pin 1 and pin 2: 2.4Ω Between pin 3 and pin 4: 2.4Ω
2nd tray feed motor			Between pin 1 and pin 2: 3.4Ω Between pin 3 and pin 4: 3.4Ω

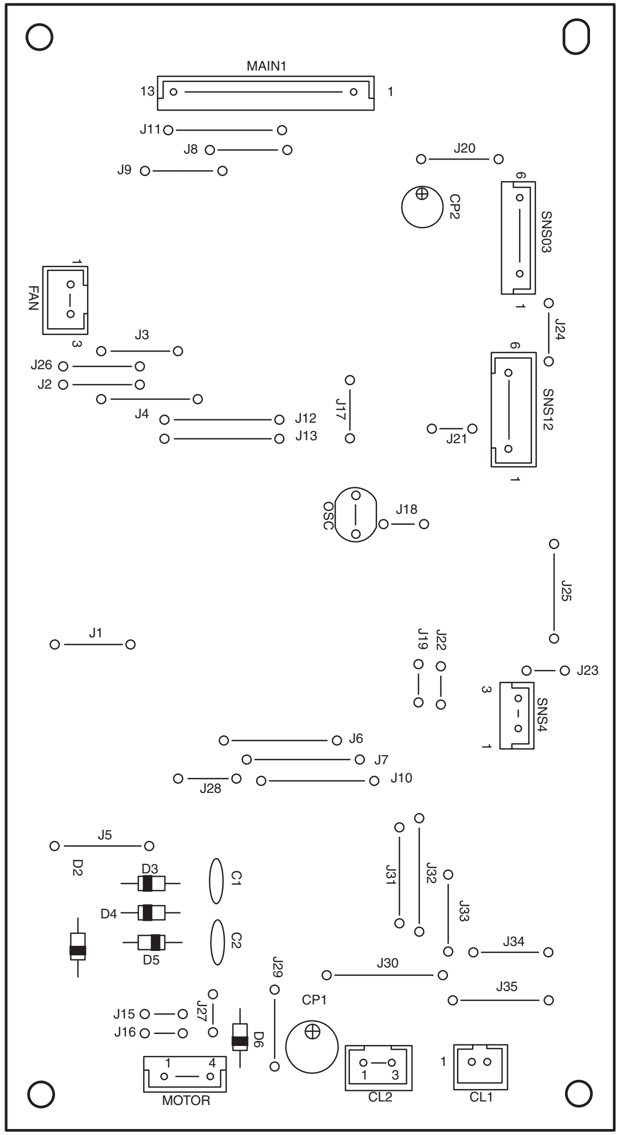
Unit	Circuit diagram & Configuration	Part schematic	Resistance value
Fuser Unit	 Thermostat Upper #1 800W Upper #2 400W 3 1 2 4 13P-RWZV-K4GG-P4 CZHR-07V-S Upper center thermistor (PM9-342) Correction thermistor (PT3-312) Upper side thermistor (PT7-312) 1 2 3 4 5 6 7 A7 A6 A5 A4 A3 A2 A1 13P-RWZV-K4GG-P4 CZHR-06V-S Fuse (Revison) 1 2 3 4 5 6 B6 B5 B4 B3 B2 B1 13P-RWZV-K4GG-P4	 B6 B1 3 4 A1 A7 2 1	Upper center thermistor Between pins A-6 and A-7: Approx. 8058 k to 5338 kΩ (0 to 93°C) Upper side thermistor Between pins A-2 and A-3: Approx. 104.5 k to 806.5 kΩ (0 to 43°C) Lower thermistor Between pins B-5 and B-6: Approx. 104.5 k to 806.5 kΩ (0 to 43°C) Correction thermistor Between pins A-4 and A-5: Approx. 104.5 k to 806.5 kΩ (0 to 43°C)

8.2 Component layout

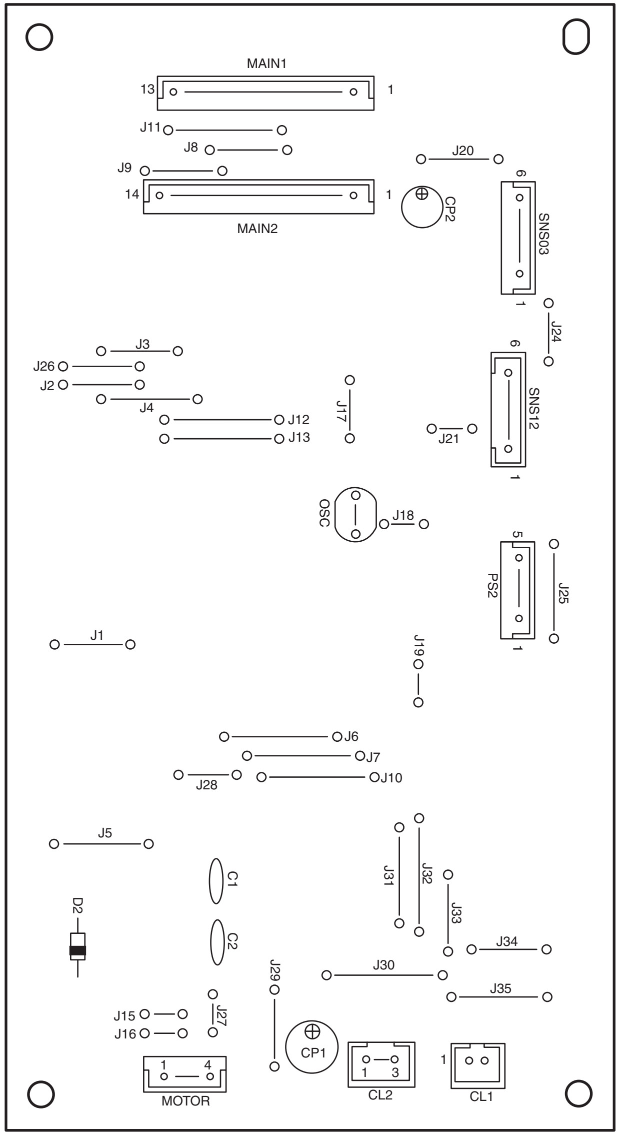
(1) Print engine controller PCB (IZA PCB or IZA-2 PCB)
*A specified part number depends on RSPL.


OPE
12
1
STKFL
1
3
RFID
5
1
DCID
11
1
FSNS
1
5
HPPSZCL
1
13
PEHOP
1
6
MP1
1
2
SSNS
1
5
HEAD0
24
1
USB1
1
4
2
3
USB2
4
1
LAN
8
7
2
1
OPTION
2
1
24
23
COVER
2
1
DHV
1
28
FUSER
11
1
POWFAN
1
3
INTH
1
2
FESNS
4
1
ADHFAN
3
1
POWER
1
19
2
20
CENT1
32
1

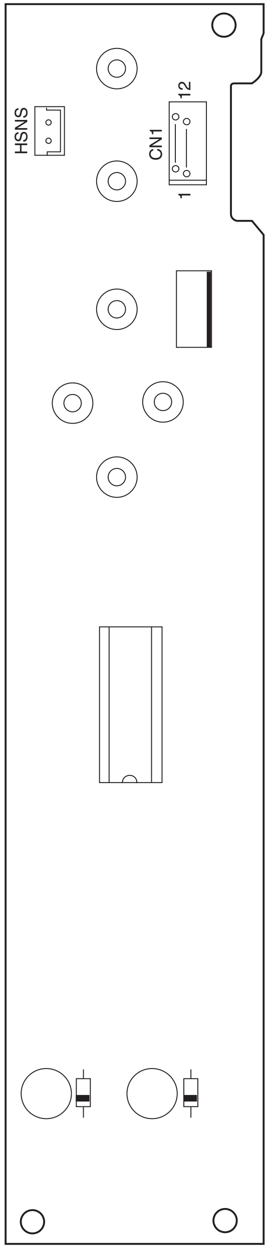
(2) Duplex print control PCB (V7Y-17 PCB)


MAIN1
13
1
J11
J8
J9
J20
CP2
SNS03
6
1
FAN
1
3
J3
J26
J2
J4
J12
J13
J17
J21
J24
SNS12
6
1
OSC
J18
J25
J1
J19
J22
J23
SNS4
3
1
J6
J7
J10
J28
J5
D2
D3
D4
D5
C1
C2
J31
J32
J33
J34
J29
J30
J35
CP1
J15
J16
J27
D6
MOTOR
1
4
CL2
1
3
CL1
1

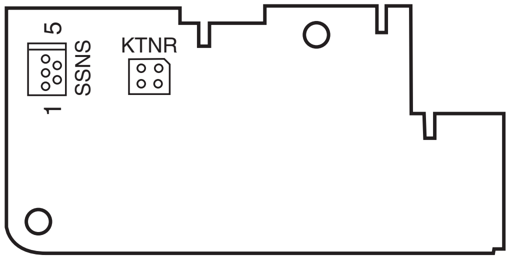
(3) Second tray control PCB (V7Y-18 PCB)


MAIN1
13
1
J11
J8
J9
J20
14
1
MAIN2
CP2
SNS03
6
1
J24
J3
J26
J2
J4
J12
J13
J17
J21
SNS12
6
1
OSC
J18
PS2
5
1
J25
J1
J19
J6
J7
J10
J28
J5
D2
C1
C2
J31
J32
J33
J34
J29
J30
J35
J27
J15
J16
CP1
MOTOR
1
4
CL2
1
3
CL1
1

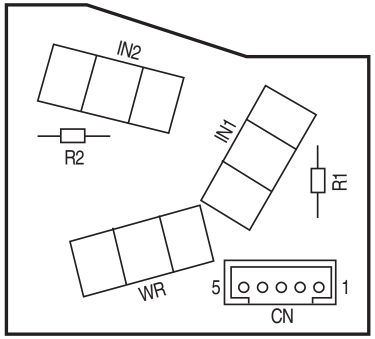
(4) Control panel PCB (IZO PCB)


HSNS
CN1
12
1

(5) Toner-Low sensor PCB (IZT PCB)

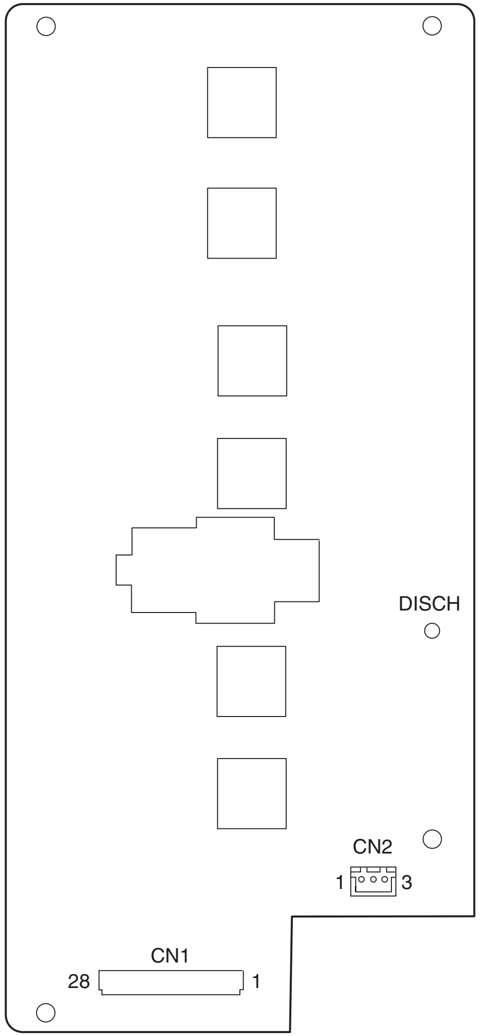

5
1
SSNS
KTNR

(6) Inlet sensor PCB (RSF PCB)

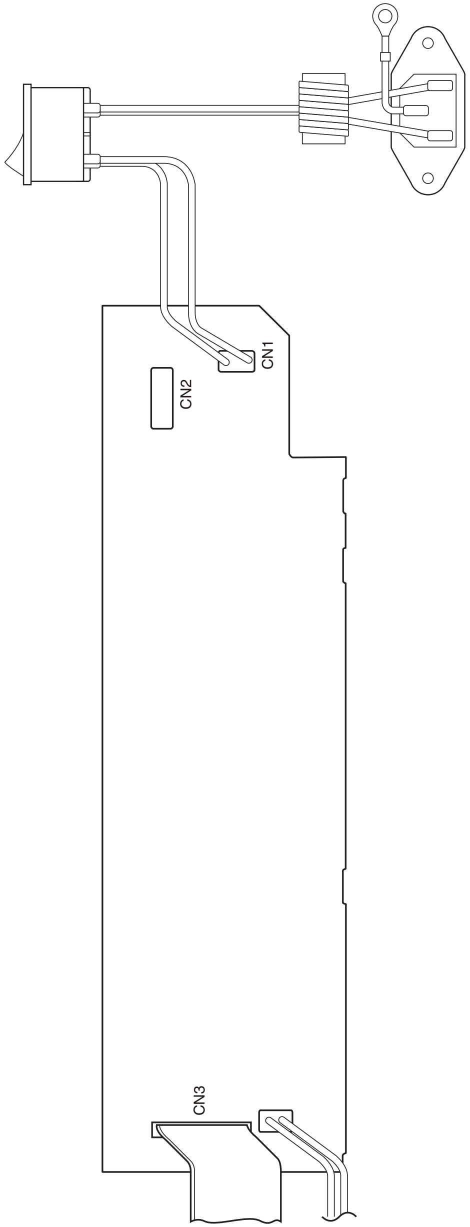

IN2
IN1
R2
R1
WR
5
1
CN

(7) High-voltage power supply PCB

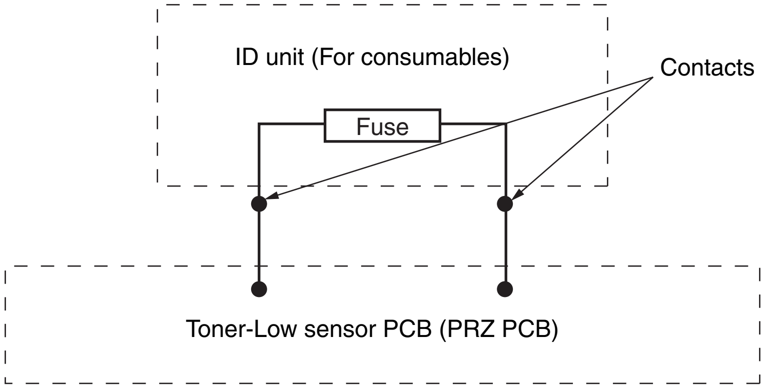
*A specified part number depends on RSPL.

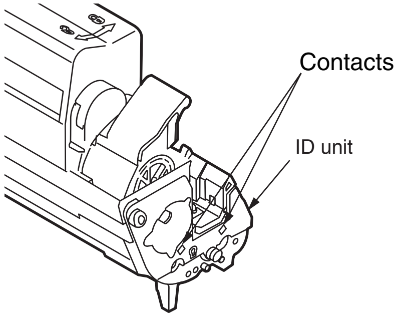

DISCH
CN2
1
3
CN1
28
1

(8) Low-voltage power supply PCB



(9) ID Unit


ID unit (For consumables)
Contacts
Fuse
Toner-Low sensor PCB (PRZ PCB)


Contacts
ID unit

8.3 Firmware revision numbers

8.3.1 ROM control numbers

B820

ROM-FD revision no.	ROM-FD drawing no.	Firmware revision no.	Date of issue	Notes
3	44671801FY01	Loader: 01.01 CU FW: A1.04 NIC FW: 01.01 (web01.00) PU FW: 00.00.19	7/30/2010	CheckSum: BDE0E7C1h
4	44671801FY01	Loader: 01.01 CU FW: A1.04 NIC FW: 01.01 (web01.00) PU FW: 00.00.20	10/21/2010	CheckSum: 5F59687Bh
5	44671801FY01	Loader: 01.01 CU FW: A2.00 NIC FW: 01.01 (web01.00) PU FW: 00.00.51	11/20/2010	CheckSum:

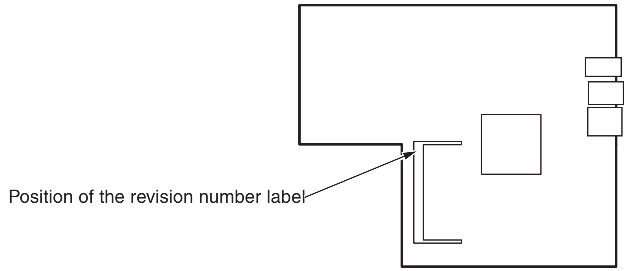
B840

ROM-FD revision no.	ROM-FD drawing no.	Firmware revision no.	Date of issue	Notes
3	44671802FY01	Loader: 01.01 CU FW: B1.04 NIC FW: 01.01 (Web01.00) PU FW: 00.00.19	7/30/2010	CheckSum: C56A87F0h
4	44671802FY01	Loader: 01.01 CU FW: B1.04 NIC FW: 01.01 (Web01.00) PU FW: 00.00.20	10/21/2010	CheckSum: 5F59687Bh
5	44671802FY01	Loader: 01.01 CU FW: B2.00 NIC FW: 01.01 (Web01.00) PU FW: 00.00.51	11/20/2010	CheckSum:

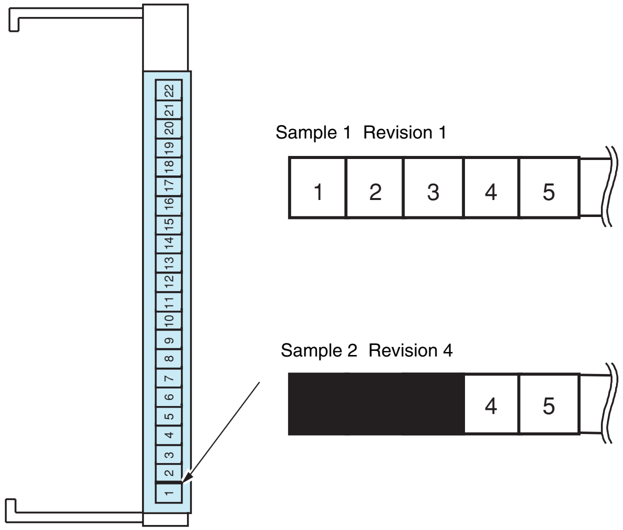
8.3.2 Checking and indication of the revision number

(1) Print out MenuMap and check to make sure that the firmware revision number has been updated.

(2) According to the revision number of the downloaded firmware, fill in the box(s) of an ROM label attached to the position shown in the picture below.

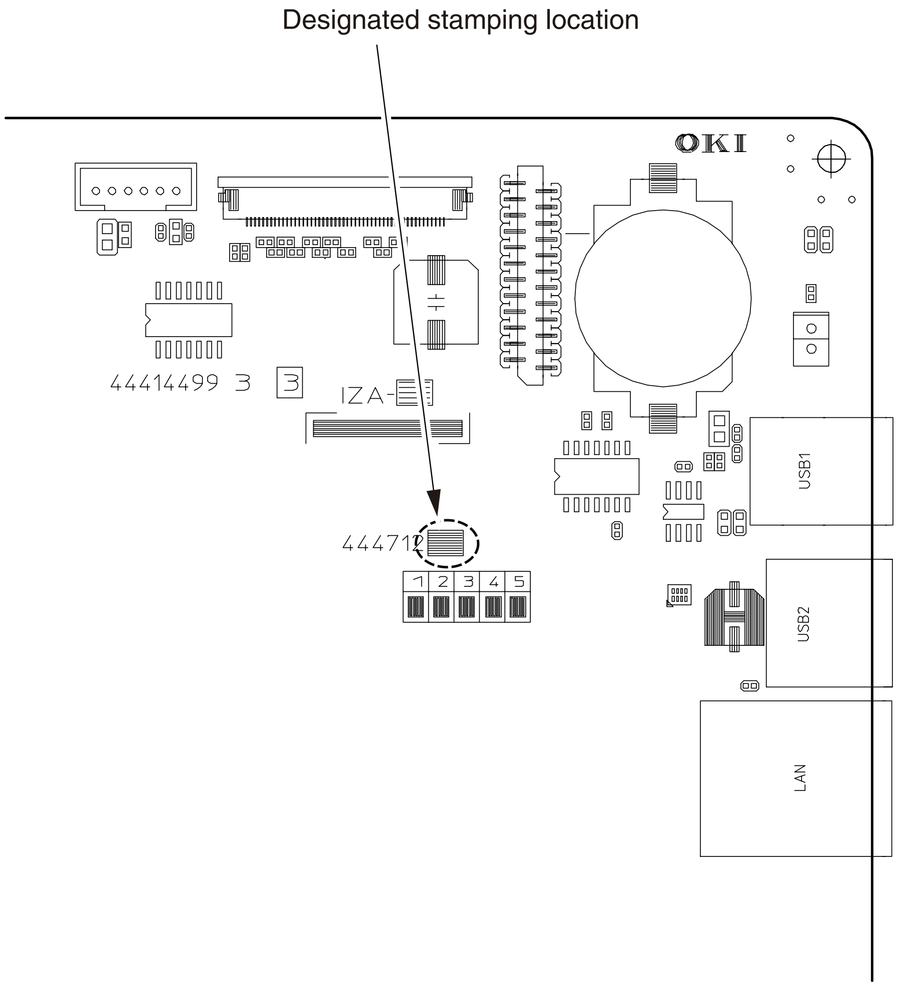


Details of the revision number label



8.3.3 Stamp of maintenance board indication

A designated article number is stamped in the area for maintenance board indication on the CU/PU board in accordance with the table below.



Maintenance article number

Series No.	Stamp No. [Maintenance Board Series No.]	Board IZA (YU) Series No.	Use
1	444712 [01]	IZA (44414401)	IZA Board-Maintenance for JPN
2	444712 [02]	IZA (44414401)	IZA Board-Maintenance for ODA_230v
3	444712 [03]	IZA (44414401)	IZA Board-Maintenance for ODA_120v
4	444712 [04]	IZA (44414401)	IZA Board-Maintenance for OEL
5	444712 [05]	IZA (44414401)	IZA Board-Maintenance for AOS
6	444712 [06]	IZA (44414401)	IZA Board-Maintenance for TWN
7	444712 [07]	IZA (44414401)	IZA Board-Maintenance for KOREA
8	444712 [08]	IZA (44414401)	IZA Board-Maintenance for CHINA
9	444712 [09]	IZA (44414401)	IZA Board-Maintenance for
10	444712 [10]	IZA (44414401)	IZA Board-Maintenance for
11	444712 [11]	IZA-2 (44414402)	IZA-2 Board-Maintenance for JPN
12	444712 [12]	IZA-2 (44414402)	IZA-2 Board-Maintenance for ODA_230v
13	444712 [13]	IZA-2 (44414402)	IZA-2 Board-Maintenance for ODA_120v
14	444712 [14]	IZA-2 (44414402)	IZA-2 Board-Maintenance for OEL
15	444712 [15]	IZA-2 (44414402)	IZA-2 Board-Maintenance for AOS
16	444712 [16]	IZA-2 (44414402)	IZA-2 Board-Maintenance for TWN
17	444712 [17]	IZA-2 (44414402)	IZA-2 Board-Maintenance for KOREA
18	444712 [18]	IZA-2 (44414402)	IZA-2 Board-Maintenance for CHINA
19	444712 [19]	IZA-2 (44414402)	IZA-2 Board-Maintenance for
20	444712 [20]	IZA-2 (44414402)	IZA-2 Board-Maintenance for